TechNotes

JANUARY 1987

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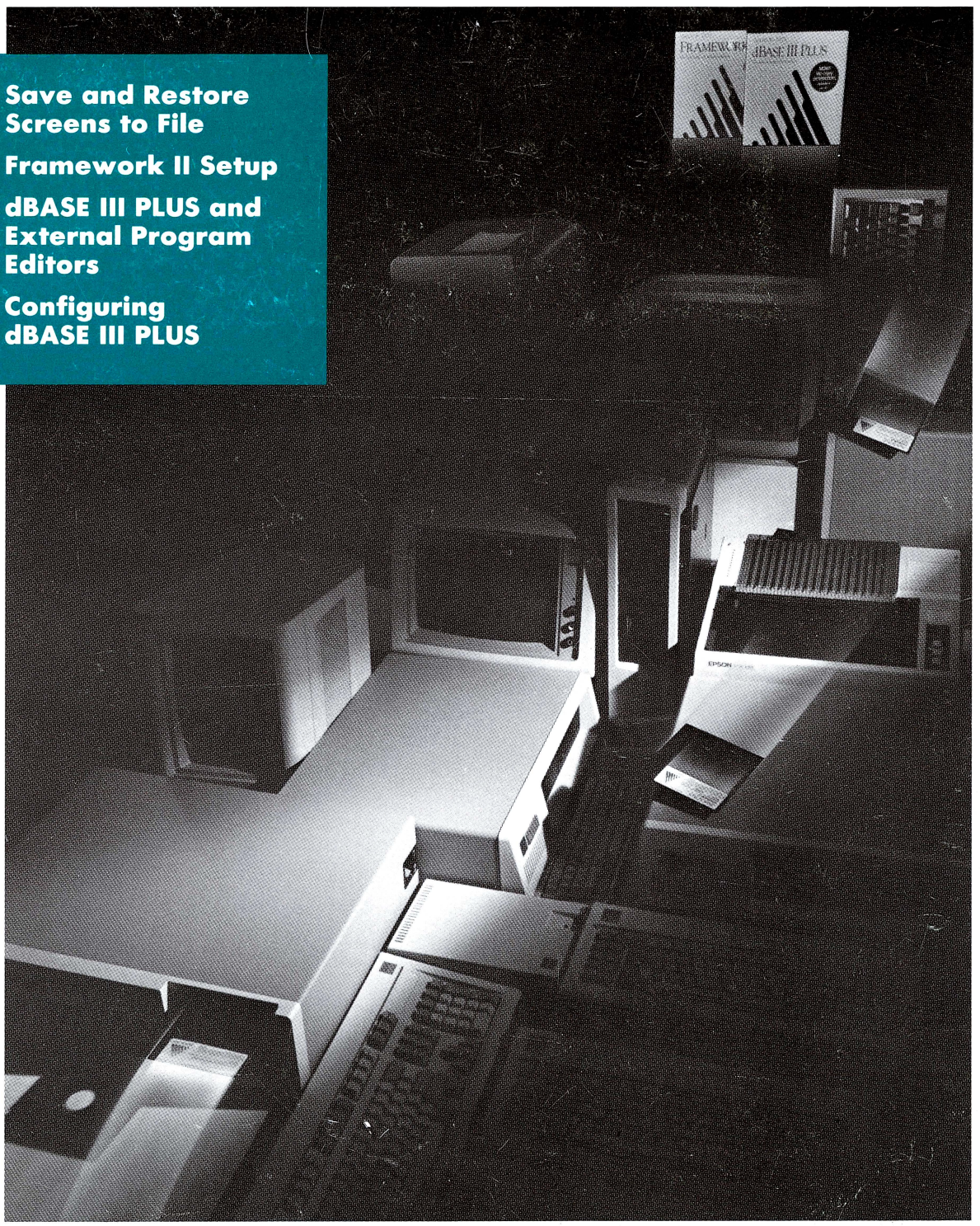
- **Save and Restore Screens to File**
- **Framework II Setup**
- **dBASE III PLUS and External Program Editors**
- **Configuring dBASE III PLUS**



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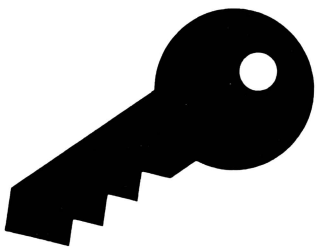

BY BRENDA JOHNSON-GRAU

Welcome to a new year and a new look for ***TechNotes***! Once again, we've taken the opportunity of a new year to redesign our page format. We hope you find it friendlier and more energetic. We've changed our look—but not our commitment to providing accurate and current technical information on Ashton-Tate products. We've come a long way since the first issue of ***TechNotes*** appeared in February, 1985. Our new look tells you that we are always striving to improve ***TechNotes***.

Now, to the important stuff: the contents of the issue at hand. This issue spotlights setting up and customizing your system environment—for Framework II and dBASE III PLUS. First, we have "A Practical Guide to Framework II Setup," by Karen Robinson, a map detailing both the well-trodden and the less-travelled paths through Framework II's Setup program. New and experienced Framework II users will find useful tips on creating a Framework environment that suits their system and their working style. On the dBASE side, we present "Configuring dBASE III PLUS with CONFIG.DB," which explains how to create a CONFIG.DB file and offers some tips on how to use CONFIG.DB to customize dBASE for particular applications.

Ray Cortenbach's overview, "dBASE and External Program Editors," provides requirements, syntax examples, and usage tips on using dBASE with several popular text editors: Edix, the Norton Editor, SideKick!, and WordStar.

MultiMate: This month's installment focuses on GraphLink, the text and graphics integrator that enhances your MultiMate documents by allowing you easily to integrate graphics, such as pie charts, graphs, floor plans, maps, and screen images, within your MultiMate Advantage documents.

International: We discuss the major differences between the European and U.S. versions of dBASE III and dBASE III PLUS and provide an updated table showing the available versions of dBASE III and dBASE III PLUS in the European market.

TechNotes wishes you a happy and well-programmed new year!

TechNotes

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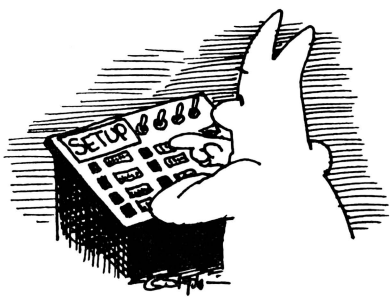
A Practical Guide to Framework II Setup



BY KAREN ROBINSON

The Setup program serves two basic functions, installation and customization of Framework II. In this article we will discuss the options for each, offer some "quick access" keystrokes that you can use to access frequently used screens, and tell you how to use DOS batch files to maintain setup configurations for different hardware and preference settings. At the end, you will find an appendix containing a quick access map of the Setup structure, screen by screen.

The Framework II Setup program is for the most part, self-documenting. You can access context-sensitive help with **HELP (F1)** from wherever you are located to answer questions regarding that Setup choice or screen. In many places, the help system has useful tips on how to modify selections to get the best results. Most everything you need to know, however, is outlined on the screen.

To make the Setup screens easier to read and use, many of the choices branch to several sublevels. At any point before saving the change you have made, you can back up and view or change the options again. There is no sublevel that you can't back out of.

The Setup program is divided into two major sections reflected by the following menu choices on the Welcome screen of Setup:

1. Set up Framework II for the first time
2. All other uses of the Setup program

The **Set Up Framework II for the First Time** menu choice leads you through the installation of Framework II onto your hard disk, installation of a driver for your printer, and a driver for your screen. This is a once only procedure. All other configuration choices are made from the **All Other Uses of the Setup Program** menu choice.

Setting Up Framework II For the First Time

Choosing a Screen Driver

The screen driver that you choose depends on the adapter card and the monitor. There are four types of screen drivers: monochrome text, color text, monochrome graphics, and color graphics. For any given adapter card/monitor combination, there may be several different drivers to choose from. If you are not sure of which screen driver to select, refer to the article, "Framework II Screen Drivers," in the July 1986 issue of ***TechNotes***. This article discusses how the various screen driver choices affect the performance of Framework II and how color operates on the supported adapter cards. It includes a table of screen drivers and their supported attributes, color charts, and driver suggestions. In addition to the screen drivers offered in Setup, there are some new screen drivers available through the Ashton-Tate Software Support Center, the Ashton-Tate Forum on CompuServe, and The Source.

Choosing a Printer Driver

Unlike the screen driver choices, installing your printer is fairly straightforward. For detailed information regarding printer drivers, refer to "Framework II Printer Drivers" in the August 1986 issue of ***TechNotes***. This article discusses supported features for each, as well as printing graphs and sending special control codes to your printer. Included is a table that lists all of the supported printers and their respective attributes. Like the screen drivers, there are a few new printer drivers available through the Ashton-Tate Software Support Center, the Ashton-Tate Forum on CompuServe, and The Source.

Choosing a Port Assignment

The printer port assignment tells Framework II which port your printer is connected to. If you use the MODE command to redirect your printer, be sure to set up Framework II to reflect this change. For example, if you redirect LPT1: to COM1: (MODE LPT1: = COM1:), the port assignment in Framework II should be to LPT1:, so that DOS can redirect the output to COM1:.

Install

Although Setup appears to be similar for both Framework II versions 1.0 and 1.1, the installation behaves differently. In version 1.0, Setup installs SUPERLoK copy protected files along with the printer and screen drivers. (If you are having trouble installing the SUPERLoK copy protection, refer to "SUPERLoK Notes" in the July 1986 issue of ***TechNotes***.) In version 1.1, installing Framework II means running the ID program to build the operational form of the software as well installing the printer driver and screen driver. The ID program prompts you for your name, your company's name, and your serial number in order to identify the copy as yours. When you enter Setup for the first time, if ID has not been run, Setup prompts you through it.

Make sure that when you run ID, System Disk #1 does not have a right protect tab on it since ID writes to the floppy disk.

Upgrading from Version 1.0

If you have Framework II version 1.0 installed on your hard disk, uninstall it to remove the SUPERLok copy protection scheme from the hard disk before installing version 1.1. You can use your version 1.0 FWSETUP file with Framework II version 1.1, though not directly. To do this, follow the steps below:

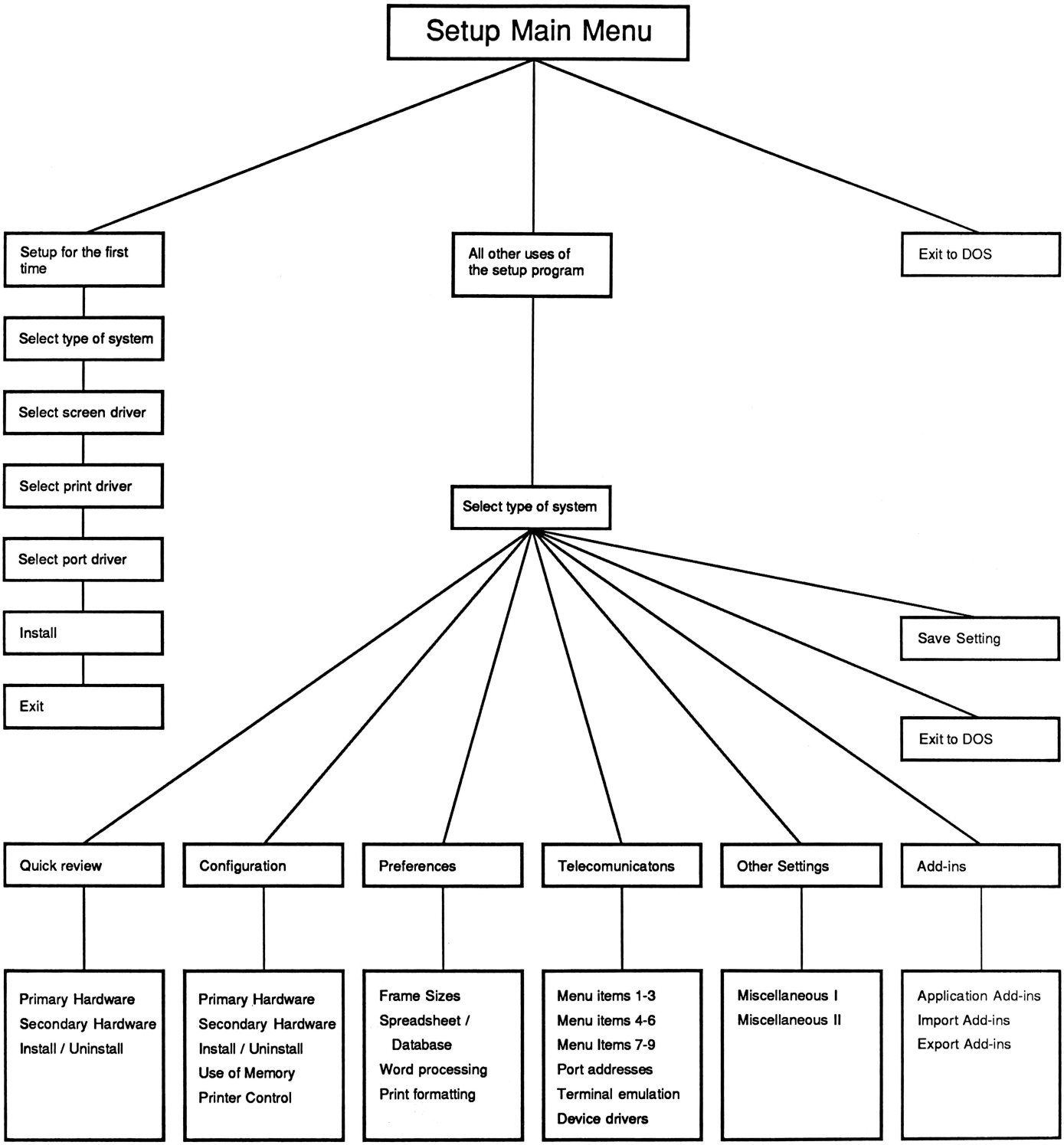
1. Before installing Framework II version 1.1, copy the old FWSETUP file to another directory or disk.
2. Install version 1.1 using option 1, **Set Up Framework II for the First Time**.
3. Copy the old FWSETUP file to Framework II directory.
4. Execute Setup again and select 2, **All Other Uses of the Setup Program**.
5. Framework II returns the error message "Your FWSETUP file doesn't match this version of the Setup program." Select 1, "Yes, I want to upgrade my FWSETUP file."
6. Save this Setup file to disk.

You can also use the Library.FW2 and the Personal.DCT from version 1.0 without making any changes. When you install version 1.1, Setup does not overwrite the Library or the personal dictionary file if either file exists.

All Other Uses of the Program

The **All Other Uses** menu allows you to customize the configuration Framework II. Once you have installed Framework II, you can customize various aspects of it, such as frame sizes, screen color, extended memory, and telecommunications. The **All Other Uses** menu has eight options and several sub-options outlined in the figure below.

Use the following map as your guide when you use the program.


Setup Main Menu
Setup for the first time
All other uses of the setup program
Exit to DOS
Select type of system
Select screen driver
Select print driver
Select port driver
Install
Exit
Select type of system
Save Setting
Exit to DOS
Quick review
Configuration
Preferences
Telecomunicatons
Other Settings
Add-ins
Primary Hardware
Secondary Hardware
Install / Uninstall
Primary Hardware
Secondary Hardware
Install / Uninstall
Use of Memory
Printer Control
Frame Sizes
Spreadsheet / Database
Word processing
Print formatting
Menu items 1-3
Menu items 4-6
Menu Items 7-9
Port addresses
Terminal emulation
Device drivers
Miscellaneous I
Miscellaneous II
Application Add-ins
Import Add-ins
Export Add-ins

Following is a brief discussion of the Setup Main Menu options.

```
PRIMARY HARDWARE                    CURRENT SETTING        NEW SETTING
Screen    driver                     IBM monochrome            same
Keyboard  driver                     IBM keyboard              same
Printer 1 driver                      FX-85 (low)              same
Printer 2 driver                        Generic                same
Plotter   driver                   HP 7475A  (6 pens)          same
Printer 1 port assignment            Parallel port 1          same
Printer 2 port assignment            Parallel port 2          same
Plotter   port assignment             Serial port 2           same

SECONDARY HARDWARE                  CURRENT SETTING        NEW SETTING
Screen color (foreground)                  0                  same
Screen color (background)                  0                  same
Use numeric coprocessor                  Yes                  same
Number floppy disk drives                  1                  same
Number hard   disk drives                  1                  same
Default drive                              0                  same

INSTALL/UNINSTALL                   CURRENT SETTING        NEW SETTING
Install/Uninstall FW to hard disk       Installed             same
Copy DOS files onto FW floppies       DOS not copied          same
```

The **Quick Review** option displays seven pages that include all of the current settings. You cannot make any changes from this menu choice as the name implies, you can only view the settings. If you need to document any page of **Quick Review**, use **Shift-PrtScrn** to send the current screen page to the printer.

Change Configuration

```
                        CHANGE CONFIGURATION

                                    (3) INSTALL/UNINSTALL
(1) PRIMARY HARDWARE                    Install/Uninstall FW to hard disk
    Screen    driver                    Copy DOS files onto FW floppies
    Keyboard  driver
    Printer 1 driver                (4) USE OF MEMORY
    Printer 2 driver                    Keep overlays in memory
    Plotter   driver                    Size of overlay buffer
    Printer 1 port assignment           Extended memory (on/off)
    Printer 2 port assignment           Extended memory driver
    Plotter   port assignment           Extended memory maximum size
                                        Extended memory drive name
(2) SECONDARY HARDWARE
    Screen color (foreground)       (5) PRINTER CONTROL
    Screen color (background)           Printer 1 lines per inch
    Use numeric coprocessor             Printer 2 lines per inch
    Number floppy disk drives           Printer 1 characters per inch
    Number hard   disk drives           Printer 2 characters per inch
    Default drive                       Printer 1 printing priority
                                        Printer 2 printing priority
```

The **Change Configuration** menu allows to edit your configuration settings related to hardware other than Telecommunications.

Primary Hardware

The Printer Driver: As stated earlier, in addition to the printer drivers included with Framework II, there are new printer drivers available through the Ashton-Tate Software Support Center, the Ashton-Tate Forum on CompuServe, and The Source. For detailed information regarding supported features for each driver, printing graphs, and sending special control codes to your printer, refer to "Framework II Printer Drivers" in the August 1986 issue of ***TechNotes***. The article also includes a table that lists all of the supported printers and their supported attributes.

The Printer Port Assignment: As stated in the beginning of this article, if you use the MODE command to redirect your printer, be sure that you set up Framework II to reflect this change.

The Keyboard Driver: The default keyboard drivers differ between Framework II versions 1.0 and 1.1. If you have version 1.0, there is only one keyboard driver (IBM.KB) included with the package. This driver does not support the new enhanced IBM PC (sometimes called IBM PC XT-2 and IBM PC AT-2). If you are installing Framework II version 1.0 on one of these machines, you must use the newest keyboard driver (also called IBM.KB), available through the Ashton-Tate Software Support Center, the Ashton-Tate Forum on CompuServe, and The Source.

Framework II version 1.1, by contrast, offers three keyboard drivers:

Driver	What it does
OLDIBM.KB	The default driver in version 1.0
T1200.KB	Driver for the Tandy 1200
IBM.KB	IBM enhanced keyboard for the AT-2 and XT-2

In Framework II version 1.1, the default keyboard driver (IBM.KB) supports both the "old" and the "new" enhanced IBM keyboards. When you install the Framework II, Setup checks the ROM BIOS to determine the driver to install, the "old" or the "new." On some IBM PC compatibles, however, Setup misinterprets the results of its examination of your machine, and erroneously loads the wrong driver. If your computer freezes after the license agreement but before the desktop finishes painting, this may be the problem. To solve the problem, install the old IBM keyboard driver, OLDIBM.KB as your keyboard driver.

If you have a Tandy 1200 computer, install the special keyboard driver configured for this computer, T1200.KB. For instructions on how to install a driver not included as a Setup menu choice, refer to the section, "Installing Custom Drivers" below.

Secondary Hardware

Numeric Coprocessor: This option tells Framework II whether or not to take advantage of a numeric coprocessor (8087 or 80287 chip), if you have one installed in your computer. The default setting is "Yes." Change this option only if you have a numeric coprocessor and do not want to use it.

Be aware that Framework II only uses a numeric coprocessor for transcendental (trigonometric and logarithmic) math operations and so you will not realize a generic speed increase simply by installing one.

Number of Drive Settings: In Framework II versions 1.0 and 1.1, you can use up to ten drives, A through J, consecutively. If your drive letters extend beyond J, Framework II does not recognize them. If this is your situation, you will have to reconfigure your system so that the drive letters do not exceed J. Similarly, although Setup states that you can have up to 26 drives and accepts a number larger than 10, it truncates the request to 10 drives.

In addition, you can specify more drives than actually exist or limit the number of drives available in Framework II. If you do specify more drives than are physically there, the drive letter displays on the desktop, but Framework II does not respond when you attempt to open that drive frame.

Default Drive: The default drive option allows you to change the default drive. If you don't change this setting, the default drive is always the highest drive letter when you enter Framework II. If you want to temporarily change the default drive, you do not have to go through Setup. You can do this from within Framework II by highlighting the drive letter and pressing **Ctrl-Return**. The message "Drive default set" displays at the bottom of the screen. Changing the drive default affects only affects where Framework II saves new frames; it does not affect previously created files.

When you load a frame from the disk, Framework II remembers the original location of the frame and always saves the frame back to this location unless the location pointer has changed. You can change the location pointer by **COPYing (F8)** or **MOVE**ing **(F7)** the frame to a new drive or directory; or by using **Edit:Undo** to recover a deleted frame after you have set a new drive or directory. When you recover a frame with **Edit:Undo**, Framework II sets the location pointer to the currently set drive and directory. So, if familiar frames are appearing in unfamiliar places on your hard disk, this is probably the source of the mystery.

Screen Color: If your hardware supports color, once you have installed your screen driver, you can select a foreground and, for some systems, a background color for your screen. You cannot, however, select the colors used in **ZOOM (F9)** mode of a graph. These colors are predetermined and unchangeable. For detailed information regarding the colors available with your adapter card, refer to the article, "Framework II Screen Drivers," in the July 1986 issue of ***TechNotes***. This article includes a table that lists the supported adapter cards, the number and range of colors available on the desktop and in **ZOOM (F9)** mode, and whether or not you can select a background color for the desktop. It also includes color charts and driver suggestions.

Install/Uninstall

Setup allows you to install from option 1 of the main Setup menu (**Set Up Framework II For The First Time**) as well as from this option. If you want to initially customize more than the screen and printer driver, use this option to install Framework II.

Uninstalling is a different situation. This is the only place in Setup where you can uninstall Framework II. If you are using Framework II version 1.0 on a hard disk, you must go through Setup to correctly uninstall the copy protection. This is not necessary for version 1.1, although it is recommended. When you use Setup to uninstall either version of Framework II, only the Framework II system files are erased and not any files you created including your personal dictionary and Library.

Use of Memory

With the **Use of Memory** option, you can set up extended memory and specify how much of the Framework II overlay file to keep in memory. The default settings and ranges are shown below:

	Default	Ranges
Keep overlays in memory	No	Yes/No
Size of overlay buffer	20	20 - 500K
Extended memory (on/off)	Off	On/Off
Extended memory driver	—	AST Advantage! AST RAMpage! Intel Above Board RAM > 640K on motherboard
Extended memory maximum size	2048	256K - 32000K
Extended memory drive	C	B – Z

If the option **Keep Overlays in Memory** is YES, the entire overlay file is stored in memory. If it is NO, the amount of memory set aside for the overlay file is determined by Size of Overlay Buffer. The theoretical advantage of keeping the overlay file in memory is that Framework II can access it faster from memory than from disk. However, because it requires "real" as opposed to extended memory, this is not always useful. It might be useful if, for example, you have a two floppy system, plenty of RAM (640K), and are working with small to medium size files (less than 100K). It is difficult to state a "hard-and-fast" rule about when to keep the overlay file in memory. In general, it's probably more efficient to keep overlays OFF and instead focus on the size of the overlay buffer, if you have a hard disk and particularly if you are using extended memory. The decision is yours. If you are interested in this option, experiment to see what works best for you.

Framework II offers two methods to extend the available memory. One way is to use memory from an extended memory board (such as the AST Advantage!, AST RAMpage!, and the Intel Above Board) or RAM beyond 640K on the motherboard. The other option is to use your hard disk or a RAM disk for extended memory. For Framework II to initialize the extended memory driver, your computer needs at least 512K of RAM. In addition, if you have 512K of memory, you cannot have Extended Memory ON and Keep Overlay ON at the same time. On a 640K system, however, you can select both of these options.

A common problem with setting up extended memory is allocating too much space. The error message you receive is "Not able to load extended memory driver." The value that you enter for the extended memory size is represented in kilobytes; many people do not realize this. The default setting is approximately 2 MB of space (2048K bytes). When using a hard disk or RAM disk for extended memory, the value that you specify must be available space because Framework II creates a temporary spool file that size. You can specify up to 8 MB on extended memory boards and 32 MB on hard disks.

Additionally, if you get the error message "Not enough normal memory to use extended memory," then some other program is using a part of your RAM. Check for resident programs, such as SideKick, ProKey, and other utilities in your DOS AUTOEXEC.BAT file. You may have to remove them from memory before you can use Framework II with extended memory.

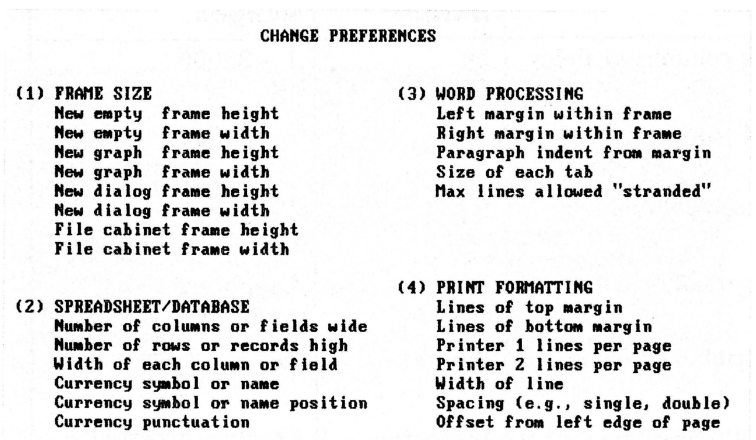
Printer Control

The **Printer Control** options allow you to change the defaults for the number of lines per inch, characters per inch, and the printing priority. Settings for printer 1 and printer 2 are separate options. The table below shows the defaults and ranges for printer 1 and printer 2:

	Printer 1 and 2	
	Defaults	**Ranges**
Lines per inch	6	6 or 8
Characters per inch	10	10, 12, or 15
Printing priority	5	0 - 25

The printing priority determines the rate data is sent to the printer, allowing you to assign relative priority to either printing or concurrent computing. The higher the number, the faster it prints, and the slower the response to each keystroke you make while printing. To facilitate faster desktop operations, set the priority lower. If you have a RAM resident print spooler, you will want to set it higher.

Change Preferences


CHANGE PREFERENCES
(1) FRAME SIZE
New empty frame height
New empty frame width
New graph frame height
New graph frame width
New dialog frame height
New dialog frame width
File cabinet frame height
File cabinet frame width
(2) SPREADSHEET/DATABASE
Number of columns or fields wide
Number of rows or records high
Width of each column or field
Currency symbol or name
Currency symbol or name position
Currency punctuation
(3) WORD PROCESSING
Left margin within frame
Right margin within frame
Paragraph indent from margin
Size of each tab
Max lines allowed "stranded"
(4) PRINT FORMATTING
Lines of top margin
Lines of bottom margin
Printer 1 lines per page
Printer 2 lines per page
Width of line
Spacing (e.g., single, double)
Offset from left edge of page

The Change Preference menu choice allows you change the default values of settings characteristically.

Frame Size

The **Frame Size** option allows you to change the default sizes of empty frames, which include word, database, and spreadsheet frames; graph frames; dialog frames (DOS access and Telecomm); and file cabinet frames. The default setting and ranges are shown below:

	Defaults		Ranges	
	Height	**Width**	**Height**	**Width**
New empty frame	11	70	1 – 30	1 – 80
New graph frame	14	55	1 – 80	1 – 80
New dialog frame	18	78	1 – 30	15 – 80
File cabinet frame	9	27	1 – 30	15 – 65

Spreadsheet/Database

The **Spreadsheet/Database** option allows you to change the default numbers of rows and columns in spreadsheets and databases as well as the currency symbol (or name), position, and punctuation. For the currency symbol you can enter a character from the keyboard, a word (cannot exceed 31 characters), or an extended character using **Alt** and the ASCII number from the numeric keypad. For example, to get the British Pound symbol (£) press **Alt-156**. The currency position refers to where the symbol should display, before or after the number. The currency punctuation determines what the thousands'separator should be, a comma or a period. The defaults and ranges are shown below:

	Default	**Ranges**
Number of columns or fields wide	50	1 – 32000
Number of rows or records high	100	1 – 32000
Width of each column or field	9	1 – 256
Currency symbol or name	$	Cannot exceed 31 characters
Currency symbol or name position	Before	Before or after
Currency punctuation	Comma	Comma or period

Word Processing

The **Word Processing** options allow you to customize the Words menu to suit your specific needs. The Max Lines Allowed "Stranded" refers to the maximum number of lines Framework II leaves at the top or bottom of a page when a paragraph is split by a page break. In Framework, this was referred to as the "widows and orphans tolerance."

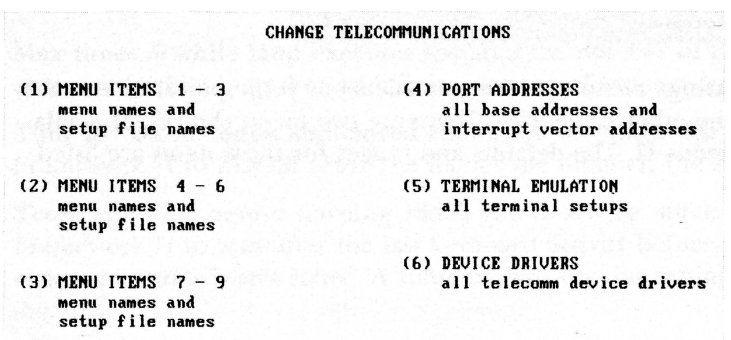
	Defaults	Ranges
Left margin within frame	0	0 – 254
Right margin within frame	65	0 – 255
Paragraph indent from margin	0	-30 – 30
Size of each tab	5	0 – 255
Max lines allowed "stranded"	3	1 – 10

Print Formatting

These options refer to the **Print:Format Options** submenu. The default and range values are shown below:

	Defaults	Ranges
Lines of top margin	6	0 – 255
Lines of bottom margin	6	0 – 255
Lines per page (printer 1 and 2)	66	1 – 255
Width of line	65	1 – 255
Spacing (e.g., single, double)	1	1 – 12
Offset from left edge of page	10	0 – 255

Change Telecommunications



The **Change Telecommunications** menu has six items. The first three allow you to add to or change the telecommunications quick-access menu items. If you have more than nine services that you call regularly and would like the same kind of fast-and-easy access available through the Telecommunications menu, refer to the article, "RBBS Dialer," in the December 1986 issue of ***TechNotes***.

The fourth item is Port Address. You do not need to use this option unless you have specialized hardware that uses non-standard base and vector addresses.

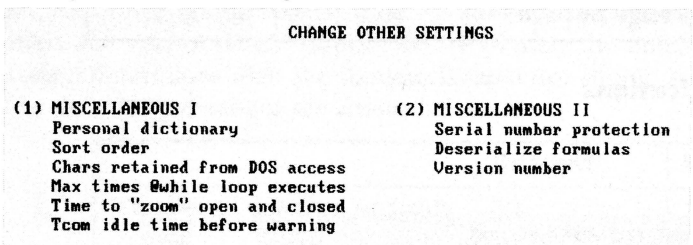
The fifth option refers to terminal emulation drivers. You can choose as many as five terminals to emulate. Because each of the five terminal choices uses one of these drivers, you do not need to change these options unless you are going to install a driver that is not included on the Setup disk. There is one additional driver (VT100D.TE) for the DEC VT-100 that changes **Backspace** to **Del**. You can get this driver from the Ashton-Tate Software Support Center, the Ashton-Tate forum on CompuServe, and The Source.

The last option allows you to install special device drivers for telecomm equipment that do not work with the standard IBM serial port. Currently, there are none available.

For more information about using Framework's telecommunication functions, refer to the following articles:

- "Telecommunications Primer" in the April 1986 issue of ***TechNotes***. This article is for first time users and discusses how to set up your modem and Framework II for using telecommunications.
- "Telecommunications Primer – Part Two," in the May 1986 issue, discusses how telecommunications relates to the rest of your desktop, and how to upload and download information during a session.
- "Telecommunications Primer – Part Three," in the June 1986 issue, focuses on the use of macros to automate your telecommunications tasks.

Change Other Settings



The **Change Other Settings** menu contains miscellaneous yet important items that do not fit neatly into the other categories. There are two menu choices: **Miscellaneous I** and **Miscellaneous II**. The defaults and ranges for these items are listed below:

	Defaults	Ranges
Miscellaneous I		
Personal dictionary	Personal.DCT	New file name
Sort order	ASCII order	Dictionary order
Chars retained from DOS access	2000	500 - 3200
Max times **@while** loop executes	2048	1 – 32767
Time to "zoom" open and closed	1	1 – 10
Tcom idle time before warning	5	0 – 15
Miscellaneous II		
Serial number protection	0	0 – 32000
Deserialize formulas	No	Yes/No
Version number	II V1.1	—

Personal dictionary filename specifies the default dictionary to use with Spelling Check.

Sort order: In ASCII sort order, punctuation and numbers precede letters. In dictionary sort order, punctuation precedes letters and letters precede numbers.

Chars retained from DOS access specifies the number of characters to save from a **DOS Access** session.

Max times @while loop executes specifies the number of times Framework II executes an **@while** loop. For an infinite number of loops, set this option to 32767.

Time to "zoom" open and closed allows you to control the time it takes Framework II to **ZOOM (F9)**. The higher the number, the slower it "zooms."

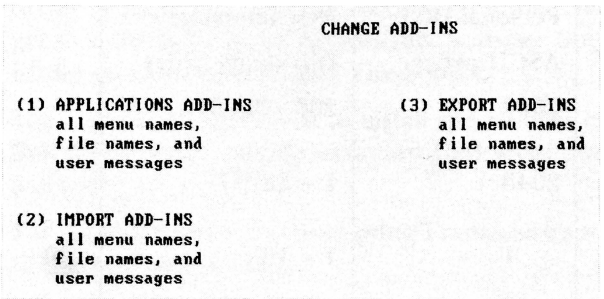
Tcom idle time before warning allows you to set the number of minutes you want Framework II to wait after the last keyboard activity before warning you that telecommunications is still active. A value of zero for this setting suppresses the warning.

Serial number protection serializes your formulas and programs so that only users whose Framework II has the same nonzero serial number can view or edit them.

Deserialize formulas allows you to deserialize formulas so that you can view and edit them. To do this, set this option to "Yes" and the serial number to its special nonzero value. When you load the frames into Framework II, the previously serialized formulas are deserialized.

Version number is an option that you cannot change. This version number should be the same as your Framework II version number.

Change Add-Ins



The Change Add-Ins option allows you to configure the nine "add-in" slots in the Apps and Disk menus. For each menu item you add or change, there are three parts: the name of the menu item, the filename (executable frame) to load, and the message that appears on the message line when you highlight the menu choice.

Save All New Setting and Exit to DOS

As the menu choice states, this option saves all the changes made to Setup. When saving changes, you can select where to write the changes to; that is, to your original Setup disk or to the working copy of FWSETUP.

Exit to DOS Without Saving Changes

Just in case you erroneously choose this option, you are always asked to verify that you want to exit without saving any changes.

Installing Custom Drivers

Many of the setup options, such as printer, screen, and keyboard configuration, also have an option for installing a driver that is not included as a menu choice. The process of installing a custom driver differs for hard disk and floppy disk systems. Below are the instructions for both. These instructions assume you have already run Setup to initially install Framework II.

Floppy Disk Systems

1. Run Setup from drive A.
2. From the first menu, select 2, **All Other Uses of the Setup Program**.
3. Insert System Disk #2 into drive B: (drive A: if you have no drive B:) and select 1, FLOPPY-DISK SYSTEMS.
4. From the Setup Main Menu, navigate to the option you want to change.
5. Once you have the list of current choices on the screen, select the last option, "I want to enter my own driver file name."
6. Enter the filename and extension. Read the screen for instructions on how to correctly enter the driver filename.
7. Press **M** to return to the Main Menu.
8. If the new driver file is not on your Setup disk, replace the Setup disk in drive A with the disk that contains the driver file, and then press **Spacebar**.
9. Verify that System Disk #2 is in drive B: and then select 1.

Hard Disk Systems

1. Run the Setup program from the directory in which you installed it.
2. From the first menu, select 2, **All Other Uses of the Setup PRogram**.
3. Select the correct hard disk configuration from options 2, 3, and 4.
3. Select the correct hard disk configuration from options 2, 3, and 4.
4. From the Setup Main Menu, navigate to the option you want to change.
5. Once you have the list of current choices on the screen, select the last option "I want to enter my own driver file name."
6. Enter the filename and extension. Read the screen for instructions on how to correctly enter the driver filename.
7. Press **M** to return to the Main Menu.
8. Place into drive A the disk that contains the driver file, and then press **Spacebar**.
9. Again, select the correct hard disk configuration.

Advanced Strategies

Quick Access Keystrokes

Framework II Setup has a typeahead buffer that stores and executes keystrokes. If you know what keystrokes are necessary to get to a specific screen, you can type these keys without having to wait for each screen to display before pressing the next key. The table below outlines the "quick access" path to some commonly-used Setup screens.

Setup Screen	Floppy Disks	Setup on Current Directory	Hard Disk Setup in Another Drive
Screen drivers	21211	22211	23 < drive > < directory >
Screen Color			23 < drive > < directory >
foreground	21221	22221	23 < drive > < directory >
Background	212222	222222	23 < drive > < directory >
Extended Memory	2124	2224	23 < drive > < directory >
Keyboard drivers	21212	22212	23 < drive > < directory >
Printer 1 drivers	21213	22213	23 < drive > < directory >
Printer 2 drivers	21214	22214	23 < drive > < directory >
Exit and Save Changes	M71Spacebar	M72Spacebar	M73Spacebar

Building a Library of Configurations

If you want to configure Framework II for any number of different operations and environments, consider using a different version of FWSETUP for each of these situations. For example, if you have an AT&T PC 6300 and use the AT&T driver, you get 33 lines per screen. If you are developing FRED applications for IBM-PC users, however, you want be sure to use a 25-line screen so that your screens accurately represents what an IBM-PC user will see when they use your application. To use different Setup configurations, first create a new FWSETUP for each configuration and give it a new name after you have saved it. Then for each set up file, create a DOS batch file that contains commands to copy the correct setup file to the Framework II subdirectory and execute Framework II.

As an example, assume that Framework II is installed in the directory C:\FW2. The DOS batch files and the various setup files are in the root directory, C: has the AT&T screen driver installed and SETUPIBM, which has the IBM Color Graphics driver installed. The contents of the batch files are listed below:

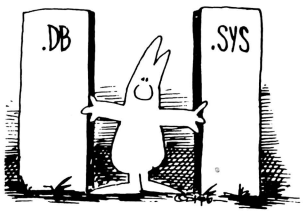
```
REM FWATT.BAT
REM Calls Framework II with the AT&T PC 6300 graphics screen driver.
COPY SETUPATT C:\FW2\FWSETUP
CD\FW2
FW/T

REM FWIBM.BAT
REM Calls Framework II with the IBM PC monochrome screen driver.
COPY SETUPIBM C:\FW2\FWSETUP
CD\FW2
FW/T
```

To execute Framework II using the AT&T screen driver, type FWATT; to use the IBM screen driver, type FWIBM.

Conclusion

We hope that after reading this quite exhaustive survey of the Framework II Setup program, you find it useful. Framework II offers a great number of configuration settings and so a familiarity with what they are and how to find them is a definite addition to your important (in contrast to essential or incidental) Framework II knowledge.



Configuring dBASE III PLUS

BY BRENDA JOHNSON-GRAU

The configuration of dBASE III PLUS is controlled from two sources, CONFIG.SYS and CONFIG.DB. CONFIG.SYS prepares the DOS environment and CONFIG.DB prepares the default state of dBASE III PLUS. In this article, we will give an overview of how to set up your configuration of DOS and dBASE III PLUS, as well listing all of the choices you have to configure dBASE III PLUS to suit your needs.

CONFIG.SYS

Each time you start your computer, DOS reads CONFIG.SYS and interprets the commands within the file. If DOS cannot find a CONFIG.SYS file, it uses the default values for the configuration commands. From your perspective as a dBASE III PLUS user, CONFIG.SYS prepares DOS for your work in dBASE III PLUS by setting the maximum number of file handles available from DOS and the number of DOS buffers to allocate. The CONFIG.SYS file must be in the root directory of the drive you boot DOS from. For a standard configuration, include the following command lines:

```
FILES = 20
BUFFERS = 15
```

If you have a system with less than 384K of RAM, use these command lines instead:

```
FILES = 20
BUFFERS = 4
```

If you are using ADDFILES.COM from *The dBASE Programmer's Utilities* to increase the maximum number of file handles available, set FILES = 30.

CONFIG.DB

CONFIG.DB is the special configuration file that dBASE III PLUS reads before executing your programs, ASSIST, or the dot prompt. dBASE III PLUS looks for the file on the default drive or directory first. If dBASE III PLUS does not find it there, it looks for CONFIG.DB along the DOS path. If it still is not found, dBASE III PLUS looks on the same disk or drive where DBASE.OVL resides. If no CONFIG.DB can be reached or if none exists, the default settings are used.

There are three classes of commands in CONFIG.DB: configuration, SET, and keys. The configuration commands are: BUCKET, COMMAND, GETS, MVARSIZ, PROMPT, TEDIT, and WP. SET commands correspond to the SET commands available in dBASE III PLUS. You can as well configure function keys one through ten.

If you work with or set up dBASE III PLUS in different environments, you can create a custom CONFIG.DB for each unique environment and application by setting up a different file for each one. To make sure that dBASE III PLUS reads the correct CONFIG.DB file, place the custom CONFIG.DB in the directory that holds your application and initiate dBASE III PLUS from that directory. Set the DOS PATH from your AUTOEXEC.BAT file so that dBASE III PLUS can be loaded from any subdirectory. (See your DOS manual for more information on setting the DOS path.)

Using CONFIG.DB on LAN workstations: Each workstation on the network can use a different CONFIG.DB file. This file should be placed in the default directory or in a directory on the DOS path.

Creating and Editing CONFIG.DB

To create a CONFIG.DB file, you can use any ASCII text editor, the DOS EDLIN editor, or the DOS COPY CON: command. As a simple example, you can use COPY CON: to create a basic CONFIG.DB. From the DOS prompt, type:

COPY CON: CONFIG.DB **Return**
PROMPT = DB > **Return**
DEFAULT = B**Return**
STATUS = ON**Return**
COMMAND = SET MESSAGE TO VERSION()**Ctrl-Z Return**

Then, copy this file to your dBASE III PLUS System Disk #2 or dBASE III PLUS subdirectory if necessary. Using COPY CON: is easy if your CONFIG.DB file is short. For longer files and easier editing, use a text editor. You can, for example, use MODIFY COMMAND from within dBASE III PLUS to create or edit a CONFIG.DB file. You must, however, quit and restart dBASE III PLUS to see the effect of the new CONFIG.DB.

A CONFIG.DB file is provided on your dBASE III PLUS System Disk #1. Simply copy the file to System Disk #2 or your hard disk to use it with dBASE III PLUS. If you have a computer with less than 384K of RAM, use the CONFI256.DB file instead. When you copy the file, rename the file CONFIG.DB before loading dBASE III PLUS.

When creating or editing a CONFIG.DB file, use this syntax for each command line:

< keyword > = < value >

Apart from the configuration keywords, any dBASE III PLUS command that you set in CONFIG.DB can be reset from the dot prompt. As an example, the related dot prompt SET commands for setting delimiters would be entered with delimiters for the new value. To SET yours DELIMITERS to square brackets ([]), you would type:

```
SET DELIMITERS TO "[]"
SET DELIMITERS ON
```

from the dot prompt. However, within CONFIG.DB, the < value > parameter should *not* be enclosed in quotes. You would, therefore, use the lines

```
DELIMITERS = []
DELIMITERS = ON
```

within CONFIG.DB.

If dBASE III PLUS encounters an illegal keyword or value when reading CONFIG.DB, it displays an error message and continues executing the configuration.

Configuration Commands

BUCKET sets the amount of memory allocated to the PICTURE and RANGE options of the @...GET command. The value can be set from 1 to 31. Memory is allocated in kilobytes; so, you can determine what value you are setting by multiplying the value by 1024. Its default value is 2 (2 * 1024 bytes, or 2048 bytes). For systems with less than 384K, BUCKET should be set to 1. You might set BUCKET to a value higher than 2 if you are using a large (multiple-screen) format file with many RANGE and PICTURE clauses.

COMMAND is the dBASE III PLUS command that executes just after dBASE III PLUS is finished loading. In the CONFIG.DB that appears on System Disk #1, COMMAND = ASSIST so that dBASE III PLUS immediately enters the ASSIST mode. You can use, as an example, this keyword to start a menu program or to assign a MESSAGE setting. This command is overridden if dBASE III PLUS is loaded with a command file as a parameter. For example,

C:\db\plus > dBASE < command filename >

GETS determines the number of @...GETs that can be active at the one time. The number of GETS you can set ranges from 35 to 1023. The default value is 128. As with BUCKET, GETS should be increased if you have a large format files with multiple screens and fields from multiple database files. For systems with less than 384K, assign GETS to 35.

MVARSIZ allocates the maximum amount of space for memory variables in 1K blocks. Its possible values range from 1 to 31 and the default is 6 (for 6 * 1024 bytes). For systems with less than 384K, assign MVARSIZ to 3.

PROMPT determines the dBASE III PLUS prompt. The default is the dot (.). Because dBASE III PLUS accepts the values placed in CONFIG.DB as literals, be sure not to use delimiters when setting the prompt—or you'll get the delimiters included in the prompt line when you load dBASE III PLUS.

You can customize the prompt in any way using up to 19 characters, including graphics characters. If you would like a more friendly greeting when you work with dBASE III PLUS, create CONFIG.DB with a PROMPT = followed by an **Alt**-14. When you next load dBASE III PLUS, your prompt will be a musical note (the graphic representation of ASCII 14).

TEDIT determines what text editor dBASE III PLUS calls when you execute a MODIFY COMMAND.

WP allows you to specify a word processor other than the dBASE word processor for editing memo fields. With both TEDIT and WP, you'll need to consider the special needs of the particular program you want to use. And, you'll need to have enough RAM in your system to run the particular program and dBASE III PLUS.

Set Commands

Many of the SET commands can be configured within in CONFIG.DB. For example, you can specify the screen colors, the intensity of the screen, the delimiters used, and the size of the typeahead buffer depending on the needs of your particular application. If TALK = OFF and ESCAPE = OFF appear in your custom CONFIG.DB, for example, you won't need to set them in your program. If you like to keep your users from having to enter a command to start an application, you could, for example, place the command COMMAND = DO Menu in CONFIG.DB and your menu program would load automatically whenever the user loads dBASE III PLUS.

Like some of the configuration commands, some of the SET commands should be set depending on the amount of RAM memory you have in your computer. The size of TYPEAHEAD and HISTORY buffers, for example, should be set to 10 if you have less than 384K.

The following are the SET commands you can use as keywords in CONFIG.DB:

ALTERNATE = <filename> designates the filename used for the alternate file. When specified in CONFIG.DB, the filename is selected and ALTERNATE is SET ON.

BELL = ON/off can bring you peace and quiet from the moment you load dBASE III PLUS—if you set it OFF in CONFIG.DB.

CARRY = on/OFF specifies whether field values from the current record are carried forward to the next record when you add new records in APPEND or the APPEND mode in BROWSE.

CATALOG = <filename> selects the catalog to be used.

CENTURY = on/OFF specifies whether the century prefix is allowed for input and display.

COLOR = <color values> allows you to set the standard and enhanced screen attributes, including colors if you use a color monitor. (See SET COLOR TO in Chapter 5 of *Using dBASE III PLUS*.)

CONFIRM = on/OFF affects full-screen editing. When CONFIRM is ON, the cursor does not move to the next field until you press **Return.**

CONSOLE = ON/off affects the display of output on the screen inside a program. When OFF, output is not displayed on the screen.

DEBUG = on/OFF determines whether the output of ECHO is sent to the screen or the printer. When OFF, output goes to the screen. When ON, output goes to the printer.

DECIMALS = <0 to 14> specifies the number of decimal places dBASE III PLUS displays for the results of numeric functions and calculations. The default is 2.

DEFAULT = <drive specifier> selects the default drive where all operations take place and where files are stored unless you direct it to another drive by including the drive specifier in the filename.

DELETED = on/OFF determines whether deleted records are included or ignored by dBASE III PLUS commands.

DELIMITERS = <one or two delimiter characters> specifies the characters to be used to display field widths.

DELIMITERS = on/OFF places the selected DELIMITERS into effect. If no delimiters are specified, then DELIMITERS = ON uses colons to display the field width.

DEVICE = SCREEN/print determines whether @...SAY commands are sent to the screen or to the printer. With DEVICE = PRINT, they are sent to the printer and not to the screen.

ECHO = on/OFF determines whether command lines from programs are displayed as they are executed.

ESCAPE = ON/off enables/disables the **Esc** key.

EXACT = on/OFF specifies whether a comparison between two character strings requires that the strings be the same length.

HEADING = ON/off specifies whether column titles are shown for DISPLAY, LIST, SUM, and AVERAGE.

HELP = ON/off allows you to specify whether "Do you want some help (Y/N)?" is displayed when a user incorrectly enters a command from the dot prompt.

HISTORY = <0 to 16,000> specifies the number of executed commands that are stored in the HISTORY buffer. The default is 20. If your system has less than 384K, be sure to place the line HISTORY = 10 in your CONFIG.DB file.

INTENSITY = ON/off allows you to specify whether you want the enhanced screen attributes to be used for full-screen operations. The default selects reverse video or whatever you have set for the enhanced screen attributes with COLOR = line in CONFIG.DB.

MARGIN = <1 to 254> sets the left margin for printed output. This value does not affect your screen display. The default is 0.

MEMOWIDTH = <8 to available memory> sets the width for the display/printing of memo fields. The default is 50.

MENU = ON/off allows you to select whether you want to display a menu of cursor-control keys with full-screen commands such as APPEND, BROWSE, and EDIT.

PATH = <path name>/<path list> specifies the route dBASE III PLUS follows when looking for files not in the current directory. Use semicolons or commas to separate path names in a path list.

PRINT = on/OFF allows you to direct all screen output to the printer. It does not, however, send @...SAY commands to the printer; instead, use DEVICE = PRINT.

SAFETY = ON/off determines whether the prompt "<filename> already exists, overwrite it? (Y/N)" is displayed when a user selects an already existing filename during a file-creation operation.

SCOREBOARD = ON/off determines whether dBASE III PLUS messages appear on line 0 if STATUS is OFF or not. If STATUS and SCOREBOARD are OFF, messages such as Del, Ins, Num, or the correct range when an entry is outside the RANGE do not display.

STATUS = on/OFF sets the status line on or off. The CONFIG.DB file on System Disk #1 includes the line STATUS = ON so that dBASE III PLUS will come up with the status line displayed.

STEP = on/OFF determines whether program execution stops after each command instruction.

TALK = ON/off determines whether the response to certain commands, such as APPEND FROM, COPY, PACK, STORE, and SUM, is displayed.

TYPEAHEAD = <0 to 32,000> specifies the number of characters in the typeahead buffer. The default is 20. If your system has less than 384K, be sure to place the line TYPEAHEAD = 10 in your CONFIG.DB.

UNIQUE = on/OFF allows you to specify whether all records with the same key value are included in an index file.

VIEW = <filename> selects and invokes a view (.VUE) file.

The following are the SET commands that you *cannot* set in CONFIG.DB:

SET DATE	SET ODOMETER
SET DOHISTORY	SET ORDER
SET FIELDS	SET PRINT
SET FILTER	SET PRINTER TO
SET FIXED	SET PROCEDURE
SET FORMAT	SET RELATION
SET INDEX	SET TITLE
SET MESSAGE	

If you want to SET any of these, use COMMAND = or create a command file with the SET commands you want in it and then use COMMAND = DO <settings command file>.

Function Keys

Function key values can be customized to your working style, for a particular application, or for the users of the system. You can use either of these formats to set the function key values in CONFIG.DB:

F<n> = "<expC>"

or

FUNCTION = <n>, "<expC>"

(Note the use of delimiters around the character string.) You can use a character string of up to 238 characters for each function key. You *cannot* change the value of **F1** (the dBASE III PLUS help key). These are the default values of the other nine functions keys:

F2 = ASSIST;
F3 = LIST;
F4 = DIR;
F5 = DISPLAY STRUCTURE;
F6 = DISPLAY STATUS;
F7 = DISPLAY MEMORY;
F8 = DISPLAY;
F9 = APPEND;
F10 = EDIT;

The semicolon at the end of each command performs a **Return**. You can reset the function keys to create your own help system in an application. For example, you can direct your user to "Press **F10** for extra help..." in your menu screen and then place this command in CONFIG.DB:

F10 = "DO Ehelp;"

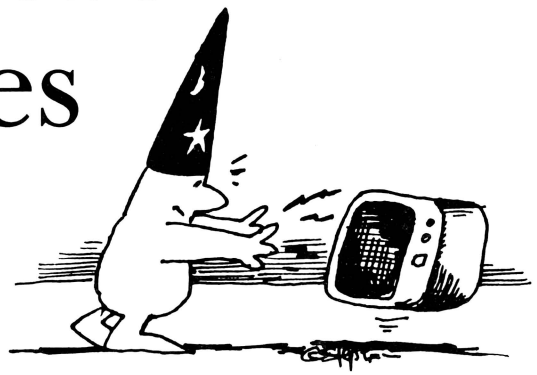
so that when the user presses **F10**, your help file, Ehelp.PRG, is executed.

Conclusion

Using CONFIG.DB wisely can make your work with dBASE III PLUS more efficient and pleasant. By customizing CONFIG.DB to the particular application, you can save program lines and save your programs some work.

Further information: Please see these other ***TechNotes*** articles: "Using MultiMate Advantage with dBASE III PLUS" in November 1986, "Using Other Programs with dBASE III" in April 1985, and "Operating dBASE III PLUS in a 256K Environment" in April 1986. For the default values used by CONFIG.DB, see Chapter 4 of the *Using dBASE III PLUS* manual.

Save and Restore Screens to Files



BY KENNETH N. GETZ

This following set of programs, Savescr.ASM, Restscr.ASM, and Mac.INC, were written to allow the dBASE III PLUS programmer to save and restore screens to and from disk files for IBM monochrome, IBM CGA, IBM EGA, and Compaq display adapters. You can use these programs to draw a help screen, for example, and save it to disk for later recall. When the help screen is needed, you can save the current dBASE screen to a file, retrieve the help screen, and then restore the old screen.

You can as well use the save and restore to disk programs in combination with the save and restore screen to memory programs included in *The dBASE Programmer's Utilities* to form an integrated system of screen management. Really, at this point the only missing ingredient is the ability to save and restore partial screens.

How to Set Up

To use Savescr.ASM and Restscr.ASM (and Mac.INC), the source code files must be created using a standard ASCII text editor (one that produces no extraneous characters of its own). Remember that comments begin with a semicolon and so, anything following one will not be entered. All other punctuation and text is vital to the correct assembly of the .BIN file.

To convert the programs from source code into a form that is executable, run the following series of programs once you have created the source .ASM and .INC files. Make sure that you use IBM or Microsoft MASM.EXE version 2.0 or higher (not ASM.EXE, it doesn't support macros), LINK.EXE, and EXE2BIN.EXE (both supplied with DOS). Also be sure that they are all available in the current directory or path.

```
MASM SaveScr;
LINK SaveScr;
EXE2BIN SaveScr
ERASE SaveScr.EXE
```

The first step assembles the source file producing an object file with an .OBJ extension. You then link the object file using the linker to form an executable file. While the new file has an .EXE extension, it is still not executable as a CALL module and must be converted to .BIN format so that dBASE III PLUS can LOAD and CALL it. You do this by running EXE2BIN on the .EXE file. You can then erase the .EXE file. Perform this process for both Savescr.ASM and Restscr.ASM.

To use the programs, first LOAD each .BIN file and then CALL it when necessary, passing the name of the file to save to or restore from. For example,

```
LOAD Savescr
LOAD Restscr
.
.
STORE "Screen.SCR" TO x
CALL Savescr WITH x
.
.
CALL Restscr WITH x
```

If an error occurs when CALLing Savescr or Restscr, the memory variable holding the filename is returned with ASCII character 175 (£) as the first character. You can test for this by using the following error trap,

```
IF LEFT(x, 1) = CHR(175)
     * ---An error has occurred.
ENDIF
```

Errors that are trapped include attempts to save to or restore from a nonexistent file or drive. When you are retrieving screens, it's quite possible for your program to ask for a screen that can't be found on the correct disk or directory. (The memory variable *can* contain a complete path name, by the way.) By testing for an error, you can avoid the unexpected empty screen when you attempt to restore a screen whose file cannot be found.

Sending Parameters from dBASE III PLUS

The concept of passing parameters back and forth between dBASE and external procedures is documented in the dBASE III PLUS and Developer's Release manuals under LOAD/CALL. When a procedure is CALLed WITH a parameter, the address of that parameter is passed to the procedure in the DS:BX register pair. It is important to realize that the DS register referenced is the calling program's data segment, not the called programs.

An Explanation of the Code

The INCLUDE file, Mac.INC, is used to reduce typing time. Macros are used in the IBM and Microsoft macro assemblers to let programmers use abbreviations for whole routines (even passing parameters to those routines), actually replacing the abbreviation with the entire routine at assembly-time. By placing procedures and definitions common to both Savescr.ASM and Restscr.ASM in one file, you only have to type them once. When you assemble both Savescr.ASM and Restscr.ASM, check to see that Mac.INC is available to the assembler either in the same directory or on the DOS path.

Savescr.ASM begins by determining the current screen mode. It stores the starting address of the video display memory in the variable SCREEN for later use. It then tries to create a file with the name passed in from dBASE III PLUS. If an error occurs, the first letter of the file name is changed and control returns to dBASE III PLUS. If the file is created without error, the DS and DX registers are set to point to the correct video memory, and 3480 (24 rows * 80 cols * 2 bytes per character) bytes are written out to the specified disk file. If you are using a graphics card, direct access to screen memory can cause on-screen "snow." Savescr works to avoid this by writing the screen memory to a memory buffer area and the status of the graphics card retrace is sensed, accessing the video memory only during a time when it's safe. It then writes the memory buffer to the disk file. While this method is slower, it does look much better when using a graphics card. The file is then closed and control returns to dBASE III PLUS.

As stated above, this program has been tested only on IBM monochrome, IBM CGA, IBM EGA, and Compaq display adapters. It is, therefore, not supported with any other display adaptors. If you wish to implement it for other display adapters, GETMODE in Mac.INC is the routine you have to modify.

Restscr.ASM works very similarly to Savescr.ASM (they are nearly mirror images). Actually, the only differences are that Restscr, in the case of a graphics card, restores the image from the disk file into the memory buffer, and then writes that information to video memory, instead of the other way around. The same testing is done for type of display adapter, and snow is avoided as much as possible.

The Code

Mac.INC

```
; Program ...: Mac.INC
; Author ....: Kenneth N. Getz
; Date ......: January 1, 1987
```

```
; Version ...: dBASE III PLUS or Developer's Release
; Note(s) ...: INClude file for SaveScr.ASM and RestScr.ASM
;              Includes: EQUates,
;              MACROS: Save, Restore, GetFile, GetMode, SetUpM, SetUpC
;*****************************************************************************
DOS         EQU    21h       ; Call to DOS.
CREATE      EQU    3Ch       ; Create a file.
OPEN        EQU    3Dh       ; Open a file.
CLOSE       EQU    3Eh       ; Close a file.
READ        EQU    3Fh       ; Read from a file.
WRITE       EQU    40h       ; Write to a file.
LENGTH      EQU    24*80*2   ; Length in bytes of screen memory.
MONOSCR     EQU    0B000h    ; Segment address of monochrome screen memory.
CLRSCR      EQU    0B800h    ; Segment address of color screen memory.
;-----------------------------------------------------------------------------
SAVE        MACRO   R1,R2,R3,R4,R5,R6,R7,R8
; This macro takes a parameter list and pushes each parameter register, in the
; order given, onto the stack.
;
;      USAGE: SAVE AX,BX,CX...
;
       IRP    X,<R1,R2,R3,R4,R5,R6,R7,R8>
              IFNB <X>
                     PUSH X
              ENDIF
       ENDM
       ENDM
;-----------------------------------------------------------------------------
RESTORE     MACRO    R1,R2,R3,R4,R5,R6,R7,R8
; This macro takes a parameter list and pops each parameter register, in the
; opposite of the order given, from the stack.
;
;      USAGE: RESTORE AX,BX,CX...
;
       IRP    X,<R8,R7,R6,R5,R4,R3,R2,R1>
              IFNB <X>
                      POP X
              ENDIF
       ENDM
       ENDM
;-----------------------------------------------------------------------------
GETFILE MACRO MODE
; This macro opens a file, putting the file handle into the variable HANDLE.
; If an error occurs, OFFh is put in HANDLE. The ASCIIZ string for the file
; name is passed in by dBASE in the DS:BX pair.
;
;      USAGE:  GETFILE CREATE
;      USAGE:  GETFILE READ
;
       MOV     CX,0           ; Set off all attribute bits.
       MOV     DX,BX          ; INT 21h needs address in DS:DX
       AND     AL,0           ; Clear out AL.
       MOV     AH,MODE        ; Get the correct mode in AH.
       INT     DOS            ; Call DOS.
       JC      L1             ; Check for carry flag set (ERROR!)
       MOV     CS:HANDLE,AX   ; If OK, move handle to storage.
       JMP     L2             ; Then quit.
```

```
L1:    MOV     CS:HANDLE,0FFH ; If error, move 0FFh into storage.
L2:    NOP
ENDM
;-------------------------------------------------------------------------
SETUPM MACRO
; Sets up for screen updates by moving correct addresses into the correct
; registers.
;
;      USAGE:  SETUPM
;
       SAVE    AX
       MOV     AX,CS:SCREEN        ; Move screen address into AX
       MOV     DS,AX               ; and then into DS.
       AND     DX,0                ; Point DX to beginning of segment.
       RESTORE AX
ENDM
;-------------------------------------------------------------------------
SETUPC MACRO
; Sets up for buffer updates by moving correct addresses into the correct
; registers.
;
;      USAGE:  SETUPC
;
       PUSH    CS
       POP     DS                  ; Make CS and DS point to same segment.
       MOV     DX DX,OFFSET BUFFER ; Move offset of buffer into DX.
       ENDM
;-------------------------------------------------------------------------
GETMODE MACRO
; Returns the screen mode in the variable SCREEN. SCREEN is, by default,
; 0B800H, the color screen area. If GETMODE finds that we're using a mono
; screen, SCREEN is set to 0B000H.
;
;      USAGE:  GETMODE
;
       SAVE    AX,BX
       MOV     AH,0Fh              ; Get set for mode check.
       MOV     BH,0                ; Screen page into BH.
       INT     10h                 ; Call the BIOS for check.
       CMP     AL,7                ; See if it's a monochrome screen.
       JNE     DONE                ; If not, quit.
       MOV     CS:SCREEN,MONOSCR   ; If so, move address to SCREEN.
DONE:  RESTORE AX,BX
       ENDM
```

Savescr.ASM

```
; Program ...: Savescr.ASM
; Author ....: Kenneth N. Getz
; Date ......: January 1, 1987
; Version ...: dBASE III PLUS or Developer's Release
; Note(s) ...: Savescr.BIN is a routine to be LOADed and CALLed from within
;              dBASE, allowing you to save and restore screens to
```

```
;             disk files. Since this is not useful from the
;             DOS level, no instructions for conditional assembly are
;             included. To use in a program, include the command:
;
;                  STORE <filename.ext> TO <memvar>
;                  CALL Savescr WITH <memvar>
;                  CALL Restscr WITH <memvar>
;
;             in your command files. This writes the current screen to
;             the specified file If an error occurs, the parameter
;             memory variable returns with CHR(175) in the first character.
;
;*****************************************************************************
INCLUDE MAC.INC ; Mac.INC contains routines used in
; both SaveScr.ASM and RestScr.ASM
;*****************************************************************************
CODE            SEGMENT BYTE PUBLIC      'CODE'
;-----------------------------------------------------------------------------
SAVESCR  PROC    FAR
         ASSUME  CS:code, DS:code, ES:code
START:   JMP     ENTRY
SCREEN   DW      CLRSCR                  ; Assume we have color screen for now.
BUFFER   DB      LENGTH DUP(0)           ; Screen save area if we have color.
HANDLE   DW      0                       ; Storage for file handle.
ENTRY:   SAVE    AX,BX,CX,DX,DS,SI,DI    ; Save the environment.
         GETMODE                         ; Find the current screen mode.
         GETFILE CREATE                  ; Create new file with name passed in.
         CMP      CS:HANDLE,0FFH         ; Signals that error occurred.
         JNE      OK                     ; If no error, continue.
         MOV      BYTE PTR [BX],175      ; If error, put chr(175) in first spot.
         JMP      ERROR                  ; Then quit.
OK:      CMP      CS:SCREEN,MONOSCR        ; See if GetMode found a Mono screen.
         JNE      COLOR                  ; If not, go to color routines.
         SETUPM                          ; Otherwise, set up for screen save.
         JMP      OUT                    ; Do the save and quit.
COLOR:   SETUPC                          ; Set up for save to buffer.
         CALL     WRITEC                 ; Move screen memory to buffer area.
OUT:     CALL     WRITEM                 ; In either case, save memory to file.
ERROR:   RESTORE  AX,BX,CX,DX,DS,SI,DI   ; Restore the environment.
         RET
SAVESCR  ENDP
;-----------------------------------------------------------------------------
WRITEM   PROC     NEAR
; This routine calls a DOS interrupt to write a specific area of memory out
; to a disk file (specified by the file handle). Expects DS:DX to be
; pointing to the beginning of memory to be written.
;
         SAVE       AX,CX
         MOV        CX,LENGTH             ; Get the length of memory to written.
         MOV        BX,CS:HANDLE          ; Get the file handle.
         MOV        AH,WRITE              ; Get set to write to file.
         INT        DOS                   ; Do the write.
         MOV        AH,CLOSE              ; Get set to close file.
         INT        DOS                   ; Do the close.
         RESTORE    AX,CX
         RET
WRITEM   ENDP
```

```
;-------------------------------------------------------------------------
WRITEC PROC      NEAR
;
; This procedure (the bulk of which was "borrowed" from Borland's TURBO
; Editor ToolBox) writes the screen memory to a memory buffer for later
; writing to a disk file. This procedure's timing is very tight, and Borland
; wrote it to minimize screen 'snow'. It works correctly on B&W, Color, and
; EGA graphics cards. (All that have been tested, anyway...)
;
       SAVE      AX,BX,CX,DX,BP,DS
       PUSH      CS
       POP       ES                      ; Make CS and ES point to same segment.
       MOV       DI,OFFSET CS:BUFFER     ; Point DI to beginning of buffer.
       MOV       DS,CS:SCREEN            ; Point DS to screen segment.
       AND       SI,0                    ; Point SI to beginning of screen.
       MOV       DX,3DAh                 ; Point DX to CGA status port.
       MOV       CX,LENGTH/2             ; Move length value into CX.
       CLD                               ; Set string direction to forward.
W1:    IN        AL,DX                   ; Get 6845 status.
       RCR       AL,1                    ; Check horizontal retrace.
       JB        W1                      ; Loop if in horizontal retrace.
       CLI                               ; No interrupt during critical section.
W2:    IN        AL,DX                   ; Get 6845 status.
       RCR       AL,1                    ; Check for horizontal retrace.
       JNB       W2                      ; Loop if not in retrace.
       LODSW                             ; Load the video word.
       STI                               ; Allow interrupts.
       STOSW                             ; Store the video word.
       LOOP      W1                      ; Go to next word.
       RESTORE AX,BX,CX,DX,BP,DS
       RET
WRITEC ENDP
;-------------------------------------------------------------------------
CODE ENDS
     END     START
```

Restscr.ASM

```
; Program ...: Restscr.ASM
; Author ....: Kenneth N. Getz
; Date ......: January 1, 1987
; Version ...: dBASE III PLUS or Developer's Release
; Note(s) ...: Restscr.BIN is a routine to be LOADed and CALLed from within
;              dBASE III PLUS, allowing you restore screens from
;              disk files. Since this is not useful from the
;              DOS level, no instructions for conditional assembly are
;              included. To use in a dBASE III PLUS program,
;              include the commands:
;
;                     STORE <filename> TO <memvar>
;                     CALL Savescr WITH <memvar>
;                     CALL Restscr WITH <memvar>
;
```

```
;             This writes the current screen to the specified file
;             and then reads it back from that file. If an error occurs,
;             the passed memory variable returns a CHR(175) in the first character.
;
;*****************************************************************************
INCLUDE MAC.INC                         ; Mac.INC contains routines used in
                                        ; both SaveScr.ASM and RestScr.ASM
;*****************************************************************************
CODE    SEGMENT BYTE PUBLIC 'CODE'
;-----------------------------------------------------------------------------
RESTSCR PROC    FAR
        ASSUME  CS:code,DS:code,ES:code
START:  JMP     ENTRY

SCREEN  DW      ClrScr                  ; Assume we have color screen for now.
BUFFER  DB      LENGTH DUP(0)           ; Screen save area if we have color.
HANDLE  DW      0                       ; Storage for file handle.
ENTRY:  SAVE    AX,BX,CX,DX,DS,SI,DI    ; Save the environment.
        GETMODE                         ; Find the current screen mode.
        GETFILE OPEN                    ; Open file (given file handle).
        CMP     CS:HANDLE,0FFH          ; Signals that error occurred.
        JNE     OK                      ; If no error, continue.
        MOV     BYTE PTR [BX],175       ; If error, put chr(175) in first spot.
        JMP     OUT                     ; Then quit.
OK:     CMP     CS:SCREEN,0B000h        ; See if GetMode found a mono screen.
        JNE     COLOR                   ; If not, go to color routines.
        SETUPM                          ; Otherwise, set up for screen restore.
        CALL    READM                   ; Read info to screen.
        JMP     OUT                     ; Then quit.
COLOR:  SETUPC                          ; Set up for restore to buffer.
        CALL    READM                   ; Fill buffer.
        CALL    READC                   ; Move to screen memory to avoid snow.
OUT:    RESTORE AX,BX,CX,DX,DS,SI,DI    ; Restore environment.
        RET
RESTSCR ENDP
;-----------------------------------------------------------------------------
READM PROC NEAR
; This routine calls a DOS interrupt to read a specific area of memory from
; a disk file (specified by the file handle). Expects DS:DX to be
; pointing to the beginning of memory to be read.
;
      SAVE    AX,CX
      MOV     CX,LENGTH               ; Get the length of memory to be read.
      MOV     BX,CS:HANDLE            ; Get the file handle.
      MOV     AH,READ                 ; Get set to do the read.
      INT     DOS                     ; Do the read.
      RESTORE AX,CX
      RET
READM ENDP
;-----------------------------------------------------------------------------
READC PROC    NEAR
;
; This procedure (the bulk of which was "borrowed" from Borland's TURBO
; Editor ToolBox) writes a memory buffer to the screen memory after
; reading from a disk file. This procedure's timing is very tight, and Borland
; wrote it to minimize screen 'snow'. It works correctly on B&W, Color, and
; EGA graphics cards. (All that have been tested, anyway...)
```

```
;
        SAVE    AX,BX,CX,DX,BP,DS
        MOV     ES,CS:SCREEN            ; Point ES to the screen segment.
        PUSH    CS
        POP     DS                      ; Make CS and DS point to same segment.
        AND     DI,0                    ; Point DI to beginning of screen.
        MOV     SI,OFFSET CS:BUFFER     ; Point SI to beginning of buffer.
        MOV     DX,3DAh                 ; Point DX to CGA status port.
        MOV     CX,LENGTH/2             ; Move length value into CX.
        CLD                             ; Set string direction to forward.
R1: LODSW                               ; Get a video word.
        MOV     BP,AX                   ; Store it in BP.
        MOV     AH,9                    ; Get horiz and vert retrace mask.
R2: IN AL,DX                            ; Get 6845 status.
        RCR     AL,1                    ; Check horizontal retrace.
        JB      R2                      ; Loop if in horiz retrace.
        CLI                             ; No ints during critical section.
R3:     IN      AL,DX                   ; Get 6845 status.
        AND     AL,AH                   ; Check for both kinds of retrace.
        JNZ     R3                      ; Loop if not equal zero.
        MOV     AX,BP                   ; Get the video word.
        STOSW                           ; Store the video word.
        STI                             ; Allow interrupts.
        LOOP    R1                      ; Go do next word.
        RESTORE AX,BX,CX,DX,BP,DS
        RET
READC   ENDP
;-------------------------------------------------------------------------------
CODE    ENDS
        END     START
```

dBASE III PLUS and External Program Editors

BY RAY CORTENBACH

In this article, we'll review some of the popular text editors you can use with dBASE III PLUS: Edix, the Norton Editor, Sidekick, and WordStar. We've selected these editors because they are popular—with our technical staff and users. You can use just about any editor will work as long as it can output (one way or another) ASCII text files. The ASCII text file format is mandatory since dBASE III PLUS must be able to parse the text into executable code. Some editors (such as MultiMate and Framework II) have their own file formats but can output files in ASCII format.

The editors are listed in alphabetical order and the discussion of each is broken up into the folllowing sections: *CONFIG.DB syntax* describes how to have your text editor become the default dBASE Word Processor; *Dot prompt syntax* describes how to invoke your word processor from the dBASE III PLUS dot prompt; *Parameters* describes different parameters that can be passed to the text editor from the command line (if applicable); *Pros* and *Cons* lists some of the positive and negative features of each editor; *Usage tips* lists some ideas to make working with the editor easier or more complete; *Requirements* specifies the minimum amount of memory needed to execute each editor with dBASE III PLUS and DOS version 3.1; *Warnings* describes any cautions and problem areas (if any) to be aware of.

Edix—Emerging Technologies, Inc., Boulder, CO

CONFIG.DB syntax:

```
WP = Edix
TEDIT = Edix
```

You can also rename Edix.EXE to E.EXE to save keystrokes:

```
WP = E
TEDIT = E
```

Dot prompt syntax:

RUN Edix [– < config filename >] [< drive > : < program filename.ext >]

MODIFY COMMAND [< drive > :][< program filename >]

Parameters: When you invoke Edix, you can pass an alternate configuration (CONFIG.EDX) filename as parameter on the RUN command line. This enables you to set up different system configurations for such things as tab lengths, extended tab on or off, upper/lowercase equivalence, auto-indentation, and a list of files to load into specified buffers (handy and time-saving). To identify the filename as the configuration file parameter, precede it with a minus sign. You can also specify the name of the file you want to edit on the same command line.

Pros: Edix is one of the more refined text editors available. Not coincidentally, it is written in the C programming language. Edix uses a buffering system to maintain up to twelve open files simultaneously. To view these buffers, you have up to four tiled windows that can display any combination of four buffers on the screen at one time. The layout of the window tiles is divided horizontally and vertically into quadrants. Windows can be one, two, or four quadrants. Flip from window to window with the **F1** through **F4** function keys (each key points to window quadrants one through four).

Another important consideration is that you can run dBASE III PLUS from one of the Edix windows, making editing quicker when you need to enter and exit the editor repeatedly.

Edix has, as well, a powerful macro library that can be used to perform complex routines, saving keystrokes. Macros can be written to perform virtually any task. Edix is relatively easy to use by the novice or the most sophisticated user. The keystrokes are mnemonic, making them non-cryptic and easy to remember.

If you have made any changes to files, Edix will not let you exit without prompting you to save the file to disk first.

Cons: Edix, because of its size, requires longer to load than many other editors. It is, therefore, advisable to use it when editing multiple files or when editing requires features that are available only in Edix.

Usage tips: The search-and-replace feature is extremely powerful. Consider this scenario: You have just used dBASE III PLUS to create a screen file and you want to use this screen with other database files. You can create another format file using the built-in screen painter. However, using Edix, you can go into the format file and strip out the alias name and designator ("–>") that precedes each GET. You then write the file to disk to save it with the changes just made. Press **Alt-F** to assign the file a different name, write the new file to disk, and you have another file that can be used with other .DBF files that contain fields with the same names.

Edix can go to a marked place in a file and to specified line numbers. It also provides access to DOS with the **Alt-V** command.

Requirements: Edix version 5.01 requires 105K to run by itself. Files to be edited require additional memory.

Warnings: If you edit a file in more than one window, the last window saved reflects only the changes made to that file. The previously saved file has a tilde (~) as the first letter of the file extension denoting the backup copy.

Norton Editor—Peter Norton Enterprises, Santa Monica, CA

CONFIG.DB syntax:

WP = NE +
TEDIT = NE +

Dot prompt syntax:

RUN NE + [starting–line][<drive>:][<input–filename.ext>];
[<output–filename>]

MODIFY COMMAND [<drive>[]:<program filename>]
Parameters: You can optionally pass to the Norton Editor four command line parameters:

Parameter	Description
+	Bypass sign-on screen
<starting-line>	Line to start editing on
<input-file>	File to edit
<output-file>	Save edit file as

You use the plus sign to take you directly into the editor without having to press **Return** at the sign-on screen. You use the starting-line parameter with processors that report an error on a certain line number. The output file parameter allows you to edit a file and have it saved as another file. Generally this feature is useful when you create a new file and want to use another file as the basis of the new file. In most editors, you do this by creating the new file and then importing the old file. In the Norton Editor, you can do this all in one step.

Pros: Because of its small size (30K), the Norton Editor loads quickly. You can edit two files simultaneously through a horizontal-split window. Additionally, you can access DOS from within the editor directly for tasks that the editor does not support.

The Norton Editor has search-and-replace features, as well as screen-format controls. You are prompted to save the edited file and so are prevented from losing your work, and it preserves three generations of backups. Other files can be read into the current work area.

It has a compressed display mode option. The cursor can be selected from a blinking underline or a solid block. Another handy feature is its automatic indentation. A mouse may be used with the editor.

Cons: The keys are not configurable and this may alienate those of you uncomfortable with the function key orientation of the Norton Editor control keys.

Usage tips: If you are working with the split screen and are editing the same file in both windows, you can easily lose changes in one of the windows. To edit separate sections of the same file, use a different output filename for the first window. For example,

NE Sample.ASM Temp
F3 X <-----Open a second window.
Enter filename: Sample.ASM

Requirements: The Norton Editor requires approximately 45K (the file itself is approximately 30K but expands to 45K when it is loaded), making it perfect for those systems with less RAM available.

Sidekick—Borland International, Scotts Valley, CA

CONFIG.DB syntax: Not applicable (RAM resident)

Dot prompt syntax: Not applicable (RAM resident)

Parameters: None

Pros: Sidekick!'s best feature is its speed; it is extremely fast because it is a TSR (terminate-and-resident), also called RAM-resident, program. Once you load it into RAM, it stays there until you either turn off your machine, reboot, or issue the command to remove it from memory. You can easily enter your program code, save it, and then execute it.

Cons: Because Sidekick! is a TSR program, it can conflict with application programs. It is, in addition, very easy to make changes to a program and exit without saving those changes—which are then lost when you reboot or turn off your machine.

Usage tips: This is a great editor for quick, on-the-fly programming. Its commands are similar to WordStar's, but they can be customized to use keystrokes that you are familiar with.

Bring up Sidekick! with **Ctrl-Alt**, then press the N for the Notepad. Use **Shift-Shift** to exit back to your application program. If you wish to re-enter the Notepad, press **Shift-Shift** again to resume with the file where you last left it.

Sidekick! also has the ability to cut from the screen and paste into your program. This allows you to model and test expressions at the dot prompt (in combination with History) and then cut and paste these into the command file you are editing in the Notepad. This ability allows you to code the structural parts of a program first and then go back and fill in command lines that require complex and intricate expressions.

Requirements: Sidekick! requires about 80K and stays in the lower 640K of RAM; it must be the last TSR program loaded into RAM to operate properly.

Warnings: Do not RUN Sidekick! or remove it from memory from within dBASE III PLUS. Always load or remove Sidekick! from memory from the DOS prompt. Failure to do so will only result in trouble.

In addition, don't forget to write the file you are editing to disk after you finish the current edit by pressing **F2.** It is easy to forget and then lose your changes.

Also, when using Sidekick! to debug a command file, be sure to close your command file before you bring up Sidekick to make corrections. dBASE III PLUS buffers a section of your command file in memory, so if you make changes to the section in the buffered area, you will not see your changes until dBASE III PLUS reloads that part of the file from the disk again.

WordStar—MicroPro International Corporation, San Rafael, CA

CONFIG.DB syntax:

```
WP = WS
TEDIT = WS
```

Dot prompt syntax:

RUN WS [< drive > :][< program filename.ext >]

MODIFY COMMAND [< drive > :][< program filename >]

Parameters: Like most of the other editors, WordStar can be passed the filename to be edited from the command line. Before you use WordStar, however, run the WordStar installation program (Winstall) and set up the program so it defaults to non-document mode (that is, ASCII text) when invoked. Ordinarily, WordStar defaults to the document mode, which places hidden characters in the file. See your WordStar manual for precise details on how to run Winstall.

Pros: WordStar is a venerable workhorse text processor. It has good search-and-replace features and a quick find feature. For column-oriented editing, it supports column block operations.

Cons: The program does not recognize path names and does not support auto-indentation.

Another inconvenience is the behavior of the **Del** and **Backspace** keys. **Del** performs a destructive backspace instead of the more characteristic deletion of the character at the cursor position. To delete characters at the cursor position, you must use **Ctrl-G**. **Backspace** performs a nondestructive backspace, the same as **Ctrl-S** or **Leftarrow**.

Usage tips: WordStar is an easy-to-use editor/word processor. You are prompted to write the file to disk if you attempt to exit without saving first.

If you are using DOS 2.xx, you must place the WordStar overlay files in the subdirectory where you are editing your command files. If you are using DOS 3.0 or greater, you can circumvent WordStar's inability to handle path names by using the SUBST command to substitute a drive letter for a subdirectory. Assuming that C is the default drive and that there is either a path to a DOS subdirectory or the SUBST.COM file is in the current directory, its syntax is:

SUBST <drive from A: to Z:> C:\<WordStar subdirectory name>

In addition to this syntax, modify your CONFIG.SYS file so that it contains the line:

LASTDRIVE = <choose the last drive's letter that you want DOS to recognize>

The last drive's letter must be equal to or greater than the drive letter you wish to substitute for the subdirectory.

If you use a batch file to go into dBASE, include the above SUBST command as one of the lines in the batch file so that when you need to edit files while in dBASE and wish to use WordStar, all the system configurations will already be set.

You should also remember to negate the SUBST command upon exiting dBASE. A typical BATCH file would look like the following:

```
ECHO OFF
CLS
SUBST F: C:\WORDSTAR
CD\dBASE
DBASE
CD\
SUBST F: /D
```

Requirements: WordStar requires up to 115K to operate. The mandatory files for WordStar operation are WS.COM, WSMSGS.OVR, and WSOVLY1.OVR. WordStar will not operate unless these three files reside in the same directory as dBASE or in another directory using DOS 3.1's SUBST command.

Warnings: Use the non-document mode. Using the document mode to write command files for dBASE III PLUS will give unpredictable results.

Conclusion

Almost any text editor will work in place of the dBASE III PLUS word processor if your system has the sufficient amount of RAM and you have an understanding of how dBASE III PLUS and the program will interact. Ultimately, the features you need and the amount of money that you want to spend will dictate your choice.

For further information on using external programs with dBASE III PLUS, see the articles, "Using Other Programs with dBASE III PLUS," in the April 1985 issue of ***TechNotes*** and "Using MultiMate Advantage with dBASE III PLUS," in the November 1986 issue of ***TechNotes***.

Introducing Graphlink

SUBMITTED BY LIZ BURKE

MultiMate GraphLink is a text and graphics integrator that enhances your MultiMate documents by allowing you to easily integrate graphics, such as pie charts, graphs, floor plans, maps, and screen images, within a MultiMate Advantage document.

To use MultiMate GraphLink, you need to meet the following system requirements:

- IBM PC, XT, AT or 100% compatible
- IBM or compatible color/graphics board and monitor
- MS/PC-DOS 2.0 or higher
- MultiMate Advantage Professional Word Processor version 3.31, 3.50, or 3.60

Using MultiMate GraphLink involves four basic steps:

- Capture the image.
- Save the image to a file.
- Insert the filename into your MultiMate Advantage document.
- Print the document.

Below are instructions on how to place a pie chart (or another graphics image) into a MultiMate document file.

Capture the Image

1. Load GraphLink into memory.
2. Load your graphics program and create and display a pie chart on the screen.
3. If your graphics program uses medium screen resolution, press **Alt-PrtSc** to display the GraphLink main menu; otherwise, press **Shift-PrtSc**.

Save the Image

1. Select the SAVE option from the GraphLink main menu.
2. When prompted, enter Salespie for the filename.
3. Press **Esc** to save the pie chart as Salespie.PIX.
4. Exit from the graphics program and load MultiMate Advantage.

Insert the Filename

1. From within MultiMate Advantage, create or load the document that will contain the pie chart.
2. Move the cursor to where you want the pie chart printed and enter the following command,

   [< drive > \ < directory > SALESPIE]

   Be sure to include the brackets.
3. Press **Return** enough times to leave space for the pie chart. To verify that there is enough space, press **Shift-PrtSc** or **Alt-PrtSc** to display the GraphLink main menu and then select VIEW. An outline border that shows the pie chart size displays. If you need more room, add extra **Return**s.
4. If the pie chart is larger than you want, use the GraphLink MODIFY command. The MODIFY command offers several options: CLIP (selects parts of the pie chart), EXP (changes the size of the image), and BOR (prints a box around the image).

Print the Document

1. Before printing your document, first verify that the correct Printer Action Table (PAT) is installed for both MultiMate Advantage and MultiMate GraphLink.
2. To print the document, go to the Print Parameters screen (option 3 from the MultiMate Main Menu) and press **F10**.

Graphlink Q & A

Q: What are the hardware requirements for using MultiMate GraphLink?

A: MultiMate GraphLink runs on an IBM PC, XT, or AT—providing it has a color graphics card and a color monitor. You can, however, use GraphLink in limited ways with a color graphics card and monochrome monitor. With this configuration, you can capture and save an image, but you cannot view or clip the image.

Q: Does MultiMate GraphLink display on screen exactly what will print out on paper?

A: No. The graphics image always displays in single-spaced format. Any document format changes, such as justification or double spacing, are not shown on the screen. In addition, printer resolutions vary, which may affect the shape of the graphics image.

Q: I have an Okidata printer with Plug'n Play, which Printer Action Table (PAT) should I use?

A: Use GROPRIN.PAT.

Q: How can I get a screen dump (**Shift-PrtSc**) when GraphLink is resident in RAM?

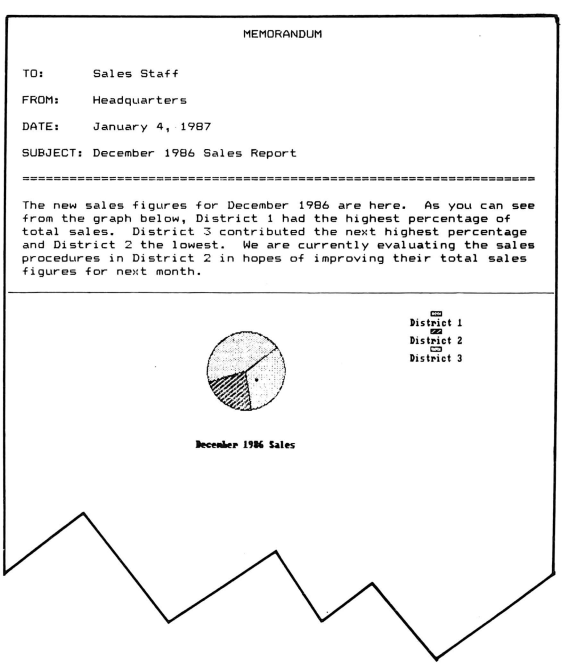
A: Press **Shift-PrtSc** to bring up the GraphLink main menu, and then press N for NEXT. This will execute the DOS **Shift-PrtSc**.

Q: When should I use **Alt-PrtSc** to invoke the GraphLink menu?

A: Use **Alt-PrtSc** to bring up the MultiMate GraphLink main menu when your graphics program uses medium screen resolution, like Lotus 1-2-3.

With MultiMate GraphLink you can easily create professional reports that include graphics and text. For example, the pie chart shown below was captured using GraphLink and merged with a MultiMate document for printing.

```
DOCUMENT: MEMO2                    ‖PAGE:   1‖LINE:   1‖COL:  32‖
|1..»....»....»..............................................................«
                                   *MEMORANDUM«
«
TO:      Sales Staff«
«
FROM:    Headquarters«
«
DATE:    January 4, 1987«
«
SUBJECT: December 1986 Sales Report«
«
=========================================================================
«
The new sales figures for December 1986 are here.  As you can see from the
graph below, District 1 had the highest percentage of total sales.
District 3 contributed the next highest percentage and District 2 the
lowest.  We are currently evaluating the sales procedures in District 2 in
hopes of improving their total sales figures for next month.«
«
                        [C:\Memos\SALESPIE]«
```



USAGE TIPS

dBASE III PLUS Version 1.1

BY JOSEPH PERRET

.NDX File Size

To calculate the size of a dBASE III PLUS index file after an INDEX or REINDEX to within 1K, use the following program, Ndxsize.PRG. The variable, keyexplen, refers to the length of the index file's key expression and must be provided. Keyexplen is eight when using numeric or date type keys and is rounded up to the nearest multiple of four on character type keys. To execute Ndxsize, use the following general syntax:

```
USE <your database file>
klen = <length of index key>
ret_val = 0
DO Ndxsize WITH klen, ret_val
```

```
* Program ...: Ndxsize.PRG
* Author ....: Paul Redmond
* Date ......: January 1, 1987
* Note(s) ...: Calculates the optimal size of an index file after
*              an INDEX or REINDEX.
*
PARAMETERS keyexplen, answer
PRIVATE ALL
blkkeycnt = INT(504 / (keyexplen + 8))
blkleft   = RECCOUNT() / blkkeycnt
blkcnt    = blkleft + 2
blkkeycnt = blkkeycnt + 1
DO WHILE blkleft > blkkeycnt
   blkleft = INT((blkleft - 1) / blkkeycnt) + 1
   blkcnt  = blkcnt + blkleft
ENDDO
answer = blkcnt * 512
* EOP Ndxsize.PRG
```

Note that the size of the index file changes if an APPEND is used with an indexed database file. INDEX and REINDEX optimize the index file; this formula approximates the optimum index file size. This algorithm is relevant to both versions 1.0 and 1.1 of dBASE III PLUS.

SET ALTERNATE TO

You can use the following program, Cpsep.PRG to COPY a database file to a flat ASCII file with no separators between either fields or records. Such a file differs from the SDF format in that each record is not separated with a carriage return/line feed pair.

```
* Program ...: Cpsep.PRG
* Author ....: Quinn Wildman
* Date ......: January 1, 1987
* Note(s) ...: Creates a text file image of a database file with
*              no record separators.
*
SET TALK ON
ACCEPT "Enter name of text file: " TO txtfile
ACCEPT "Enter name of database file: " TO dbfile
USE &dbfile
SET ALTERNATE TO &txtfile
SET ALTERNATE ON
DO WHILE .NOT. EOF()
   cnt = 1
   DO WHILE LEN( FIELD( cnt )) <> 0
      macro = FIELD( cnt )
      ?? &macro
      cnt = cnt + 1
   ENDDO
   SKIP
ENDDO
SET ALTERNATE OFF
CLOSE ALTERNATE
CLEAR ALL
SET TALK ON
* EOP Cpsep.PRG
```

dBASE Administrator

BY DAVID HOWLETT

PROTECT Privileges

Update, delete, and extend privileges have priority over the read privilege in certain circumstances when you are working with an encrypted database file. For example, if you have an access level of 4 and are working with an encrypted database file that has the read privilege set to an access level of 1 and the update privilege set to an access level of 4, you are allowed to BROWSE, thereby reading data in the file even though your read privilege would not allow you to view the encrypted database file.

"Variable not found"

If you attempt to use a field in an encrypted database file that you do not have access privileges, dBASE Administrator returns the error message "Variable not found." This condition can occur in a .PRG file, a .FMT file, or at the dot prompt. This is not documented as a cause of the "Variable not found" error message.

dBASE III and Novell

dBASE III versions 1.0, 1.1, and the Developer's Release are incompatible with the Novell operating system. Attempting to run any of these versions will hang the system. This is due to a software interrupt conflict between dBASE III and Novell.

Framework II

BY CHRISTOPHER WHITE

Faster Word Level Editing

If you edit documents by navigating with word level keys such as **Ctrl-Rightarrow** or **Ctrl-Leftarrow** and you hold down the **Ctrl** key with your left ring finger, then you know that in order to select with the **EXTEND SELECT (F6)** key, you must first lift your left ring finger (the one that doesn't lift very well) off the **Ctrl** key and then **EXTEND SELECT (F6).** If you find this problem and would like avert the annoyance of pressing **EXTEND SELECT (F6)** and finding that **Ctrl-F6** executes instead, you can change this with a small trick.

The secret is to redefine **Ctrl-F6**, assigning it to perform an **EXTEND SELECT (F6)** in the **Apps:Telecommunications:Setup:Macros** menu. You might at first think of reassigning **Ctrl-F6** with a keyfilter. This does work very well, however, since **Ctrl-F6** is a member of the macro key class and reassigning it causes all macro keys, **Alt** and **Ctrl,** to execute **Ctrl-F6,** neutralizing all of your other macros. This is not really a tenable solution for a key reassignment that you need all the time.

So, for most situations load the generic .TCM file, Telecomm.TCM from the **Apps:Telecommunications:Setup:Load Setup File** menu and enter the keyname for **EXTEND SELECT (F6)**, ({F6}), into the macro area for **Ctrl-F6**. Then save Telecomm.TCM back to disk. Now, whenever you load Framework II, **Ctrl-F6** executes **EXTEND SELECT (F6)**. If you use telecommunications often, you may want to reassign the **Ctrl-F6** key for your most frequently used .TCM files.

Auto Line Feeds in Telecommunications

In telecommunications, Framework II does not generate an automatic line feed when a carriage return is sent. This is a problem with remote computers that do not automatically execute a line feed with a carriage return.

One way to handle the situation is to create a FRED macro that inserts a line feed character ({010}) at the end of every line of text to be transferred. To execute this macro, write the text frame to disk from the **Disk:Export:ASCII Text** menu to insert carriage returns at the end of each line of text. Then load the .TXT version of your text frame back to the desktop and execute the following macro from the border of the frame.

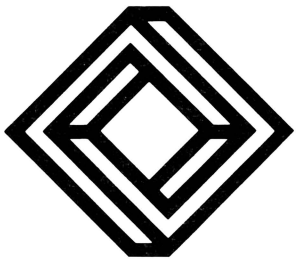
```
; Add_lf.FW2
;
; by Quinn Wildman
;    January 1, 1987
;
; Highlight text frame that needs padding and initiate
; this macro.
;
@performkeys("{Dnlevel}{Ctrl-Home}{Dnarrow}"),
@isabend(#FALSE),
@while(@not(@isabend),
```

```
    @performkeys("{Home}{010}{Dnarrow}")
)
```

File Capture in Emulation

Framework II version 1.0 did not allow you capture a Telecomm session directly to disk if Emulation was ON. Your only means of capturing text information from the screen was the **Ctrl-PrtSc** "screen-shot" technique. Continuous capture was only available when Emulation was OFF.

Framework II version 1.1 now has the undocumented ability to capture Emulation sessions directly to disk. However, you do not use the pull-down menus, as you would for a desktop session. During an Emulation session, when you decide you want Capture ON, press **Ctrl-Ins** to access the "Local Command:" prompt, and type the command CAPT ON. You are then prompted for a filename, and subsequently, all text received from the remote system is captured to that file. To close the capture file and turn off the capture mode, press **Ctrl-Ins** and type CAPT OFF. These local commands are documented in **Framework II Advanced Topics** reference manual. If you are not using Emulation, file capture works exactly as it did in version 1.0.



ANOMALIES

DEFINITION OF ANOMALY

We use the word "anomaly" to mean any one of the following:

- INCORRECT COMMAND (or function) IMPLEMENTATION. A command or function does not execute as specified.
- INCOMPLETE COMMAND (or function) IMPLEMENTATION. A command or function does not execute as specified in every use of the command or function.
- DATA OR LOGICAL BOUNDARY LIMITATION. A command or function cannot perform an operation at a specified data or logical boundary.

  NOTE: Ashton-Tate reserves the right to withhold any further information that may reveal proprietary or trade secret information.

---

dBASE III PLUS Version 1.1

@...GET/SET DELIMITERS ON

Executing @...GET at column 79 with SET DELIMITERS ON causes the computer to freeze requiring a warm boot and may, in addition, cause lost clusters. Column positions less than 79 work correctly and column positions greater than 79 properly return the error message "Position is off the screen." With SET DELIMITERS OFF, column positions 0 through 79 are accessible.

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

APPEND FROM/MODIFY STRUCTURE

APPENDing FROM a database file with different data types can cause your computer to freeze, abort to DOS, or display an unexplained error message such as "Illegal field name — detected on field 8334." This happens when converting numeric fields to character or character to numeric with APPEND FROM or MODIFY STRUCTURE.

To recreate the anomaly, start with a database file with at least 25 numeric fields with widths of 12 and no decimals. USE the database file and COPY STRUCTURE TO a new database file. Change the numeric fields in the new database file to character and APPEND FROM the original database file. It may take as many as 45 fields before the anomaly appears.

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

BROWSE

If you exit BROWSE with **Ctrl-W** or **Ctrl-End** after executing the following block of code, your computer will freeze requiring a warm or cold boot.

```
USE File1
SELECT 2
USE File2
EDIT                    && A change must be made and saved.
CLOSE DATABASES
USE File1
BROWSE                  && BROWSE works correctly until you
                        && hit Ctrl-W or Ctrl-End. You do
                        && not have to make a change to
                        && cause the error.
```

@...GET with READ or BROWSE may be used in place of the EDIT command and the problem still occurs. Replacing CLOSE DATABASES with CLOSE ALL, CLEAR ALL, or USE does not correct the problem. If USE is issued, SELECT 1 must be included to cause the failure.

This anomaly is specific to version 1.1 of dBASE III PLUS.

CREATE

CREATEing a database file with a single period in the filename and no extension will cause your computer to freeze when database structure is saved. If you must CREATE a database file with no extension, use two periods.

```
CREATE Test.        && Freezes the computer when saved.
CREATE Test..       && Works correctly.
```

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

Esc

1. In version 1.0 of dBASE III PLUS, pressing **Esc** in response to INPUT (with SET ESCAPE OFF) froze the computer. Pressing **Esc** in response to WAIT returned you to the dot prompt. In version 1.1, pressing **Esc** in response to either INPUT or WAIT interrupts the program with "Cancel, Ignore, or Suspend? (C, I, or S)" regardless of the status of SET ESCAPE.

   In both versions, SET ESCAPE OFF still allows escape from APPEND, BROWSE, CHANGE, or EDIT. Pressing **Esc** during APPEND FROM, COPY or LIST does not terminate the command. DISPLAY, however, stops at the "Press any key to continue..." prompt with "*** INTERRUPTED ***" when you press **Esc**.

2. dBASE III PLUS leaves a program file open when **Esc** is pressed in response to a WAIT command in a procedure file. If the program is cancelled after the **Esc** or after an error occurs, the program file that called the procedure is not closed. For example, if you execute the following:

```
* ---Prog1.PRG
SET PROCEDURE TO Prog3
DO Prog2
RETURN

* ---Prog2.PRG
DO Hold
```

```
* ---Prog3.PRG
PROCEDURE Hold
WAIT
RETURN
```

with

```
DO Prog1
```

pressing **Esc** in response to the WAIT prompt (in the procedure Hold) and choosing the Cancel option leaves Prog2.PRG open.

If you include SET CATALOG TO <filename> before DO Prog1, the Cancel option closes the program files properly.

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

Exponentiation

The mathematical operators ** and ^ may cause your computer to freeze if a number with many decimal places is squared. For example,

```
mvar = 4.415407140497853
mvar1 = mvar**2                    && Hangs the system.
```

To work around this problem, multiply the number by itself

```
mvar1 = mvar * mvar
```

or, use the EXP() and LOG() functions

```
mvar1 = EXP(2 * LOG(mvar))
```

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

INKEY()

INKEY() no longer traps **Leftarrow** in version 1.1 of dBASE III PLUS. In version 1.0 with SET ESCAPE OFF, INKEY() returned a value of 19. With SET ESCAPE ON, **Leftarrow** suspended operation behaving the same as **Ctrl-S**. In version 1.1, **Leftarrow** is occasionally trapped by INKEY(), but more often it suspends operation regardless of the status of SET ESCAPE. If **Esc** is pressed after **Leftarrow** suspends operation, INKEY() returns a value of 19, all other keys return 0.

REPORT FORM NOEJECT

REPORT FORM NOEJECT freezes the computer on the second iteration of a DO WHILE loop. This occurs only if you chose Yes from **Options:Plain Page** when you CREATEd the REPORT. Inserting any form of DISPLAY or LIST before the REPORT FORM command causes the report to execute correctly. For example,

```
USE <filename>
DO WHILE .NOT. EOF()
    LIST MEMORY && Add this line as a work-around.
    REPORT FORM <filename> NEXT 1 NOEJECT
    SKIP
ENDDO
```

This occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

SET DOHISTORY ON

Running repetitive tasks with SET DOHISTORY ON eventually corrupts memory and freezes the computer or produces an unexplained error message. This anomaly occurs more quickly if HISTORY is SET TO a large value. For example,

```
SET HISTORY TO 16000
SET DOHISTORY ON
DO WHILE INKEY() = 0
    @ 1,70 SAY TIME()
ENDDO
```

eventually produces an "Illegal opcode: " error message. The number of passes through the loop varies but a large number of iterations (approximately 30,000) is required to cause the problem.

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

SET PATH TO/MODIFY STRUCTURE

If you SET PATH TO .., MODIFYing the STRUCTURE of a .DBF file in the parent directory of the default directory freezes the computer when you attempt to save the structure. When this occurs all records are lost.

The following steps demonstrate the commands necessary to cause the anomaly.

```
SET PATH TO ..
USE <Filename>
MODIFY STRUCTURE
```

This anomaly occurs in both versions 1.0 and 1.1 of dBASE III PLUS.

SORT

SORTing to a database file with an extension other than .DBF results in the extension being ignored and a .DBF extension being given to the new file. For example,

```
SORT ON Name TO Newfile.NEW
```

creates Newfile.DBF.

This anomaly existed in dBASE III, was corrected in dBASE III PLUS version 1.0, and regressed in version 1.1 of dBASE III PLUS.

dBASE Administrator Version 1.1

Commands that Remove an RLOCK()

The commands COPY, TOTAL, and EXPORT remove a record lock. For example,

```
SET EXCLUSIVE OFF
USE Myfile
GO 5
? RLOCK()
.T.
DISPLAY STATUS <——— This shows record 5 as locked,
                    other workstations cannot lock record.
COPY TO Temp
DISPLAY STATUS <——— This shows no records as locked,
                    other workstations can lock the record.
```

PROTECT Passwords

Creating a password with "Y" as the last letter allows you entry if the letter "I" is typed instead. For example, if you create the password "CRANKY" with PROTECT and then run the dBASE Administrator, you are allowed access by typing "CRANKI."

SET RELATION TO

When one workstation has linked two database files with SET RELATION TO, there are several commands that do not function correctly if another workstation locks a record in the linked database file. For example,

Workstation 1:

```
SELECT B
USE Lookup
SELECT A
USE Master
? RECCOUNT()
   10
SET RELATION TO RECNO() INTO Lookup
```

Workstation 2:

```
USE Lookup
GO 5
? RLOCK()
.T.
```

Workstation 1:

```
LIST
* ---This lists only the first four records;
* ---no error message is returned.
COUNT
        4
LOCATE FOR RECNO() = 9
End of locate scope
INDEX ON Name to Name
    100% Indexed                4 records indexed
```

The work-arounds are to have workstation 2 UNLOCK the record in Lookup, remove the relation, or FLOCK() the Lookup file before issuing the commands LIST, COUNT, LOCATE or INDEX ON.

SET RELATION TO/LIST

If a workstation has linked two database files with SET RELATION TO and has locked a record in the linked database file, listing the active database file removes the record lock in the linked file. For example,

```
SELECT 2
USE Lookup
SELECT 1
USE Master
SET RELATION TO RECNO() INTO Lookup
SELECT 2
GO 3
? RLOCK()
.T.
SELECT 1
DISPLAY STATUS
* ---This shows record 3 in Lookup as locked, other
* ---workstations are not able to lock record 3 in Lookup.
LIST
DISPLAY STATUS
* ---This shows no records locked, other workstations
* ---are able to lock record 3 in Lookup.
```

SKIP

The SKIP command moves the record pointer to the next position in an indexed file, which may or may not be the next physical record in the index. Therefore, if two workstations are using the same indexed database file and the key field of the current record is changed by the second workstation, the SKIP command, at the first workstation SKIPs to the next positional record. For example,

Workstation 1:

```
LIST
Record#   NAME
      2   Al
      1   David
      4   Joe
      3   Sam
      5   Susan
GO 1
```

Workstation 2:

```
GO 1
? RLOCK()
.T.
REPLACE Name WITH "Zack"
UNLOCK
```

Workstation 1:

```
SKIP
? RECNO()
      3
```

In this example, workstation 1 is first positioned at the second record in the index file. When workstation 2 executes the REPLACE, the index is restructured and record 3 becomes the third record in the index. When workstation 1 issues the SKIP command, the record pointer is positioned at record 3 instead of EOF().

One work-around is to GO RECNO() to reposition the record pointer before the SKIP command.

SKIP/APPEND

In an indexed file, SKIPing to a record which has been APPENDed by another workstation causes EOF() to be true (.T.) even though the record is not actually at the end of the index file. For example,

Workstation 1:

```
LIST
Record#  NAME
      2  Al
      1  David
      4  Joe
      3  Sam
      5  Susan
GO 4
```

Workstation 2:

```
APPEND BLANK
? RLOCK()
.T.
REPLACE Name WITH "Maxine"
UNLOCK
```

Workstation 1:

```
SKIP
? EOF()
.T.
```

In this example, workstation 1 is first positioned at the third record in the index. When workstation 2 appends a record, it becomes the fourth record in the index. Workstation 1 then SKIPs to the fourth record in the index and EOF() should return .F., but instead returns .T.

The work-around is to GOTO RECNO() before SKIPping.

Framework II

Nonbreaking Spaces

Framework II is unable to issue a nonbreaking space (**Ctrl-Space**) when **Numlock** is ON. This presents a problem on the new IBM Enhanced Keyboards (XT-2 and AT-2) which default to **Numlock** ON.

You can workaround this problem by,

1. Turning **Numlock** OFF;
2. Entering a nonbreaking space by holding down the **Alt** key and typing **254** on the numeric keypad; or
3. Creating a macro that executes an **@performkeys**("{254}") to insert the nonbreaking space.

   Note: The newest IBM.KB—available through the Ashton-Tate Software Support Center, the Ashton-Tate Forum on Compuserve, and the Source—fixes this problem.

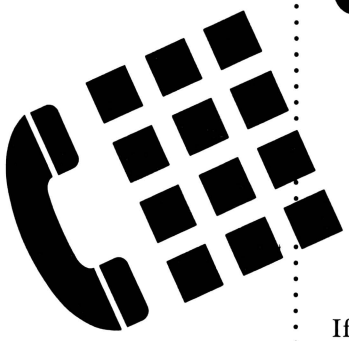
Using a Repeat Count of 0

Using a repeat count of 0 (**Ctrl-0**) to execute a macro created with the **Create:Macro/Abbreviation** menu option causes Framework II to appear to freeze the computer. However, pressing **Ctrl-Break** several times returns control to the desktop.

Using a repeat count of 0 to execute a macro created in the formula area of a frame causes the macro to execute in an endless loop. Pressing a **Ctrl-Break** followed by an **Esc** will return control to the desktop.

Viewing Frames with Frames:Allow Free Dragging ON

A display anomaly occurs in frames view of containing frames when **Frames:Allow Free Dragging** is ON and you open and close subframes whose widths are less than 17. This anomaly only occurs if you have more than one subframe and at least two frames selected with **EXTEND SELECT (F6)**. The first of the selected frames will not leave the ghost image.



ON-LINE SERVICES

BY STEVE SILVERWOOD

If you have a modem and a subscription to CompuServe or The Source, you can quickly access the same quality technical information that you have come to expect from ***TechNotes***—and you can do it through your computer system. To take advantage of this method of support, you must subscribe to one of the services listed below. There are no charges for using our on-line support services apart from the normal connect-time fees for each service. You can get specific subscription information by calling one of the following numbers:

Service	Subscriber Information	Command to find Ashton-Tate
CompuServe	(800) 848-8199	GO ASHTON
The Source	(800) 336-3366	ATSIG

To give you a sample of this on-line support, ***TechNotes*** publishes monthly excerpts from the Ashton-Tate Forum on CompuServe. This material comes from messages our Forum users have posted on the bulletin board. All message headers have been removed to protect the identities of our users. Users' queries are printed in regular text. The responses of the Ashton-Tate technicians are printed in italics.

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dBASE II, dBASE III, and dBASE III PLUS

How can I print blank spaces instead of a zero in an empty numeric field in a REPORT or LABEL FORM?

In dBASE III PLUS, you can do this with the @Z function in combination with TRANSFORM(). For example,

```
number = 0
? TRANSFORM(number, "@Z")
```

Place the TRANSFORM() expression in the field contents area of the REPORT FORM field where you to suppress the display of the zero. Note, however, TRANSFORM() returns a character string precluding its use in a REPORT FORM field that is totalled. There is no work-around for this situation short of writing a custom report.

.....

I have a customer who is running dBASE III PLUS on a Compaq portable and who is running into problems I can't explain. From the dot prompt, the customer types:

REPORT FORM Ihsrep TO FILE Ihsrepn7

which gives him the error message, "Syntax error in field expression." I don't have his data, but I tried this command on my IBM PC and I didn't get this error message. Do you have any clues?

The keyword in the error message is "field." The error is not in the command line but in the REPORT FORM itself (one of its field expressions contains an invalid expression). To find the source of the error, first check to see that your user has the correct database files in USE for the REPORT FORM in question. If they are correct, then there is an error in one of the REPORT FORM field expressions. Have the user MODIFY the REPORT and review the report format area for a field that has a question mark associated with it. This indicates that the field contents expression is invalid. Your user can then navigate to that report field and correct the error.

.....

Can someone please tell me how to use WordStar as a text editor instead of the one supplied with dBASE III PLUS?

First, install WordStar to come up in the nondocument mode. For versions 3.3 and above, use the install program that comes with WordStar. If you do not set the program up for a nondocument default, then you will get strange characters in your program files and dBASE III PLUS will choke on them. Also, WordStar must be in the same drive and directory as dBASE III PLUS.

Second, edit your CONFIG.DB file and add the line:

TEDIT = WS

which tells the dBASE III PLUS to invoke WordStar when you MODIFY COMMAND.

Be sure that you have a copy of WordStar located in the subdirectory where you are editing your command files. WordStar does not recognize paths and so will not be able to find its overlay files unless they are present in the current directory.

.....

I'm sure that this is not the first or last time that this question will be brought up but here goes. We converted to dBASE III at my office a few months back. Recently, our home office sent us a cost-management system written in dBASE II. If the programs were not so large, I would undertake the conversion manually—but the system takes up six floppies! What I need is a program that would automatically convert dBASE II to dBASE III.

dBASE III (and dBASE III PLUS) both come with a program called DCONVERT that will do just what you describe. It's on the Sample Programs and Utilities disk.

.....

I am looking for a way to create files (database, index, and program files) in a directory other than in my \dBASE subdirectory. The manual says I have to specify the directory in each command or the new file will be created in the dBASE directory. This appears to be true when using the SET PATH TO command. However, when I use RUN CD\Test from within dBASE and do my work, it seems to create the new files in the directory \TEST. HELP doesn't work, but ASSIST does.

Is doing it this way going to get me into trouble? Are there parts of dBASE III PLUS other than HELP that become inaccessible? What does this all mean? Any advice welcome. I also have a persistent feeling that this is really a silly question.

You're on the right track. And, it won't get you in trouble. Using RUN CD is the preferred way of doing things. You should, however, set your DOS path (from your AUTOEXEC.BAT file or from DOS prompt) so that it includes the directory where you have dBASE III PLUS installed. Then, you can call dBASE III PLUS from any other directory, not just from its own directory and the directories where your applications reside do not have to be in the path. HELP and ASSIST will still be available to you.

.....

I just bought dBASE III PLUS and have applied it to a program I wrote in dBASE III. It seems to work fine, except that a line appears on all screens (line 22) that I don't know how to delete. It is annoying to have that line interfere with an format screen because it covers up a line of my menu of commands. Any help?

Use the command SET STATUS OFF to turn off the status line.

.....

Framework II

How do I copy FRED program code into the formula area of a frame? For example, I want to create an **@performkeys** statement by first recording a macro of keystrokes with the **Create:Macro** menu and then copy the recorded keynames into the formula area of a frame, inserting **into @performkeys**. The result would be a usable **@performkeys** formula. How can I do it?

EXTEND SELECT (F6) *the text, the Cut with* ***Alt-F7****, navigate to formula area, Paste with* ***Alt-F8****, and then insert your* ***@performkeys*** *statement. If you don't need to actually execute the set of keystrokes, but are using the* ***Create:Macro*** *menu to automate the process of writing the keynames, you can use the keyname macro found on page 39 of the June 1986 issue of* ***TechNotes****. This macro allows you to type a key and have the keyname appear as text instead of the action of the key.*

.....

One of the services I access (Delphi) uses the **Del** key to delete previous keystrokes instead of **Backspace**. Framework II seems to intercept this keystroke when in emulation mode and eats it. Is there a way to cause a **Del** to be transmitted? Can I fake it with a macro?

I assume that you are talking about VT100 emulation. We have an optional VT100 driver that changes ***Backspace*** *to a* ***Del****. It's in DL3, and it's called VT100D.TE.*

.....

I am trying to use ***@menu*** to display the contents of a frame at the lowest end of the menu hierarchy. If I say ***@performkeys***("{F9}"), it just stays in the menu. What must I do to display the contents of a frame that is at the bottom of a menu? I don't want to call more than one frame to the desktop to do this. I am building a system that lets the user select ever-narrowing options until they are presented with an account number and a paragraph on the use of that number. Thanks.

When using ***@menu****, you return to the menu as soon as the menu choice formula is finished. You can use* ***@display*** *to display the menu choice frame (without opening it) followed by an* ***@nextkey*** *or* ***@beep*** *to pause a display. The formula of your menu choice might be,*

@display(< your menu frame name >),
@eraseprompt,
@prompt("Press a key..."),
@nextkey,
@echo(#ON)

Be aware that you can only ***@display*** *menu choice frames that are word frames. Other frame types do not* ***@display*** *when used as menu choices. You can however* ***@display*** *spreadsheets and databases if they exist outside of the menu structure.*

.....

Can someone explain to me how to change the default communications port for Point and Dial to COM2:?

Load the Telecomm.TCM file, change the COM port in the ***Setup: Options*** *submenu to COM2, then Write the file to disk (from the* ***Apps:Telecomm:Setup menu****). Your default port is now COM2:. Note that Point and Dial uses whatever port is currently in the* ***Apps:Telecomm:Setup Options*** *menu.*

.....

INTERNATIONAL

BY PAUL BUKAUSKAS

dBASE III PLUS, Not the Same All Over

Currently, dBASE III and dBASE III PLUS are sold to the European market in several different languages. Refer to the table below for a list of the available foreign language versions. The major difference between the U.S. and the European versions is that the foreign language versions support the international character set in sorting, indexing, and evaluating characters and the U.S. version does not. This article focuses on this difference as well as others as they relate to collation sequences, case folding, printing, programming, and performance.

European Translations		
Version	**dBASE III, 1.1**	**dBASE III PLUS**
Australian/ New Zealand	Yes*	Yes*
British	Yes*	Yes*
Danish	Yes	—
Dutch	Yes	—
Finnish	Yes	—
French	Yes	Yes
German	Yes	Yes
Italian	Yes	Yes
Norwegian	Yes	—
Portuguese	Yes	—
Spanish	Yes	—
Swedish	Yes	—

* U.S. version of dBASE III and dBASE III PLUS.

Collation Sequence

The collation sequence refers to the order in which dBASE III PLUS SORTs and INDEXes characters. In the U.S. version of dBASE III PLUS, characters are SORTed and INDEXed in ASCII sequence. For example, the letter "A" (ASCII 65) is ordered before "a" (ASCII 97). On the other hand, in the European versions, foreign characters are weighted so that letters, such as A (ASCII 65), A (ASCII 142), and (ASCII 143) are all considered equal.

Case Folding

Related to the collation sequence, case folding determines the uppercase or lowercase equivalent of a letter. dBASE III and dBASE III PLUS use unique case folding for each European language. The result of case folding is apparent when you use the UPPER() or LOWER() functions. In the French versions, the following results are returned:

Character	UPPER() Returns
á	A
à	A
â	A
ä	A
a	A
ç	Ç
é	E

Some foreign characters are not case folded correctly because PC/MS-DOS does not have an equivalent character in its character set. For example, the French language in Quebec, Canada carries the accent from lowercase to uppercase letters, but owing to the limitations in DOS, these uppercase accented letters are not case folded in dBASE III or dBASE III PLUS.

Printing

Printing a document can cause special problems when you are using the European versions of dBASE III and dBASE III PLUS. The problems occur when the printer you are using supports a different set of extended characters than your computer. A character will appear one way on the screen, but will print as a different character on the printer. To resolve this problem, the European versions of dBASE III and dBASE III PLUS come with a program (DBPRINT.PTB) that provides support for international character sets. Because these character sets vary from one language to the next, each foreign language version comes with its own distinct DBPRINT.PTB file. It defaults to Epson printers, though in dBASE III PLUS you can customize this file for your printer. For more information, refer to the article "A Helpful File at Print Time: DBPRINT.PTB," in the October 1986 issue of *TechNotes*.

Programming

Commands and Functions

The European versions of dBASE III and dBASE III PLUS have retained complete functionality with the U.S. versions. That is, the commands and functions work the same way. As stated above, the European versions fully support international characters. In addition, unlike the U.S. versions, functions such as ISLOWER(), ISUPPER(), LOWER(), UPPER(), and ISALPHA() are also sensitive to foreign characters. Consider the following example:

```
* --- European version
? ISALPHA("U")
.T.  <--- Result
* --- U.S. version
? ISALPHA("U")
.F.  <--- Result
```

Logical Fields and Variables

In the U.S. versions of dBASE III and dBASE III PLUS, logical fields and variables are defined as .T. (True), .F. (False), Y (Yes), or N (No). In the European versions, they are defined as .T., .F., and whatever the first characters are for "Yes" and "No" in that language. For instance, in the French version, O (Oui) and N (Non) are equivalent to the English Y and N.

MODIFY COMMAND

MODIFY COMMAND in the U.S. version of dBASE III and dBASE III PLUS is different from MODIFY COMMAND in the international versions. Command file programs (.PRG files) written using the U.S. version are not directly compatible with the international versions. If you are using such a program, use the utility SCON, which is provided with each European version, to convert the program file so that it is compatible with the international version of MODIFY COMMAND. For more information regarding these differences, refer to the International section in the September 1986 issue of ***TechNotes***.

INDEXing

The indexing algorithms used in the U.S. and European versions of dBASE III and dBASE III PLUS are not compatible. If you are transferring index files either to or from the European versions of dBASE III or dBASE III PLUS, recreate the indexes in the appropriate version.

DATE()

In the European versions, the DATE() function defaults to the format DD/MM/YY. In the U.S. versions, the default format for dates is MM/DD/YY.

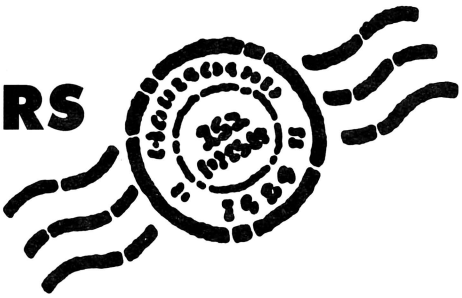
Performance

Because of the complex algorithms necessary to support foreign characters, INDEXing and SORTing are slower. Also, the speed of dBASE III PLUS programs decreases slightly whenever any of the following functions are used:

```
ISUPPER()
ISLOWER()
ISALPHA()
UPPER()
LOWER()
```

The reduction in speed depends on how often the functions are called.

LETTERS



Printing a Database in dBASE View

Dear *TechNotes*:

I am trying to set up a database in Framework II, but I cannot get the data to print out properly when using dBASE View. While the information in that format is laid out exactly the way I want it to appear, the contents of the fields are not completely printed; only a portion of the contents appears, and the rest of the data is truncated.

Please tell me what I am doing wrong!

J.M.

Dear J.M.:

When you print in dBASE View, the printouts of your database fields are being truncated because the widths are too short to display the entire field contents. To work around your problem, adjust the widths of the truncated fields by placing the frame in dBASE View with **VIEW (F10)**, then move the highlight to the field to be adjusted, pressing **SIZE (F4)**, and pressing **Rightarrow** to lengthen the width of the field. When you are satisfied with the new width of the field, press **Return**. At that point, your data will print within the newly expanded field size. Repeat the resizing process for each field that requires adjustment.

TimeFrame Source Code

Dear *TechNotes*:

I recently took a look at *TimeFrame*. It looks promising, but why is the source code locked out? How am I supposed to modify the program?

W.S.

Dear W.S.:

The *TimeFrame* and *FrameLock* products, as well as the add-on programs of the Decision Maker's Series for Framework II, are distributed by Ashton-Tate Publications on behalf of Enabling Technologies. It is that company's wish that the source code remain proprietary and not be available in the distributed product.

Data Catalogs

Dear *TechNotes*:

How do I know whether a Catalog is open or not when I am creating a file that I want to place in that Catalog? Would you also explain how I can display the files in a given Catalog?

F.B.

Dear F.B.:

In order for a Catalog to record an entry for a newly created file, CATALOG must be SET ON before you create the file. SET CATALOG TO automatically SETs CATALOG ON or you can use the command SET CATALOG ON. If you are unsure whether or not you opened a Catalog, you can DISPLAY STATUS or you SELECT work area 10 where the Catalog is opened and check for the existence of the open Catalog with the DBF() function, DISPLAY STATUS, or from the status line.

In answer to your second question, you can survey the contents of a Catalog that is in USE in two basic ways. First, if you know the file type you want, you can use the Catalog query (?). For example, to check the database files in the Catalog, type USE ?. You can, as a second example, check the associated LABEL FORMS to a database file in USE in the Catalog with the command, LABEL FORM ?. Second, if you want to survey the Catalog in a general way, SELECT 10 and report from the Catalog as you would any other database file with, BROWSE, DISPLAY, LABEL FORM, LIST, and REPORT FORM.

For more information on Catalogs, consult the Data Catalog section of the *Using dBASE III PLUS* reference manual.

Transferring Data from a Mainframe

Dear *TechNotes*:

I need to transfer information between a mainframe system and dBASE III PLUS. The data files on the mainframe were created by a COBOL program and I need to convert the data into a format that is compatible with dBASE III PLUS.

What text file format does dBASE III PLUS require to read the information?

B.C.

Dear B.C.:

dBASE III PLUS database files may be transferred between most other systems using the text file formats, SDF and DELIMITED.

The SDF format looks much like a spreadsheet. This type of file has fixed length fields and records. There is no field separator or delimiter. Each field is the same length as defined in the dBASE III PLUS database structure. A typical SDF record might look like this:

```
Steve Silverwood20101 Hamilton Torrance CA90502
|    |           |                |         | |
```

Each "|" indicates the beginning of a field's contents. When the SDF file is created, each database field is output in the same order that it is listed in the database file structure.

The second type of text file that dBASE III PLUS recognizes is the delimited file. This type of file has variable length records and fields. Each field is separated with a comma and character fields are delimited with a double quotation mark (or a character of your choice). For example, using the same data from the example above, a typical delimited record might look like:

"Steve","Silverwood","20101 Hamilton","Torrance","CA","90502"

In both file types, each record is terminated by a carriage return (ASCII code 13) and a line feed (ASCII code 10). The end of the file is indicated by a Control-Z (ASCII code 26).

Using these text file formats you can exchange data between the COBOL system you are currently using and any dBASE III PLUS applications you may develop.

Missing File in dBASE II for Small Business; Title Format

Dear ***TechNotes***:

The command file Bks-nbal.CMD mentioned on page 223 of *dBASE II Guide for Small Business* is not listed. If possible, please send me a copy of this file. I like the other programs in the book very much. I hope this one is still available.

R.R.

Dear R.R.:

The program Bks-nbal.CMD never existed. This filename was incorrectly included in the list of programs for the book. Please remove this line from the program listed on page 223 of the book.

Also, on page 222, remove the command SET ECHO ON and change the command from SET TALK ON to SET TALK OFF.

ANNOUNCEMENTS

The Developer Registry

On November 20th, Ashton-Tate Third Party Services announced *The Developer Registry*, a support service for Third Party organizations that offer consulting services, applications, software utilities, or hardware products based on or designed for use with Ashton-Tate software. Third Party Services plans to publish and distribute a semiannual directory of these organizations.

The program has been under development for nearly a year and was designed with help from Ashton-Tate VARs, consultants, training organizations, and user groups. According to Mark Whiteside, Third Party Services Marketing Manager, "We worked very hard to identify the full range of information needed by the user community to locate the right application or service." Whiteside also said: "At the same time, this program recognizes the critical roles played by Third Parties in the adoption and use of Ashton-Tate software products and will provide them with an effective means of reaching new customers for their products or services."

For more information, call Ashton-Tate Third Party Services directly at (213) 538-7358.

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January 1987

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FW	-	**Framework**
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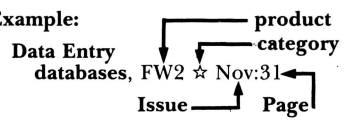

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